H.B. Robinson RO NRC Examination
Site-Specific
Written Examination

A licant Information
Name: Region: II
Date: I2flflOOl Facility/Unit: H. B. Robinson
License Level: Reactor 0 erator Reactor T e: Westin house
Start Time: Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected six hours after the examination stans.

Applicant Cenification

All work done on this examination is my own. I have neither given nor received aid.

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Results
Examination Value Points
Applicant's Score Points
Applicant's Grade Percent

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NRC Examination Answer Key

1. A	26. D	51. B	76. B
2. C	27. B	52. C	77. B
3. B	28. B	53. D	78. B
4. B	29. A	54. B	79. D
5. D	30. B	55. C	80. B
6. A	31. A	56. A	81. D
7. B	32. D	57. C	82. B
8. C	33. C	58. A	83. D
9. A	34. D	59. C	84. D
10. D	35. D	60. A	85. C
11. D	36. C	61. D	86. C
12. C	37. B	62. D	87. C
13. D	38. B	63. C	88. C
14. C	39. B	64. A	89. D
15. C	40. C	65. C	90. C
16. A	41. C	66. A	91. A
17. A	42. B	67. D	92. A
18. B	43. B	68. A	93. A
19. D	44. A	69. D	94. D
20. A	45. D	70. B	95. B
21. B	46. C	71. B	96. B
22. D	47. C	72. C	97. A
23. C	48. C	73. A	98. D
24. B	49. D	74. C	99. C
25. B	50. D	75. A	100. B

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QUESTION 001

You are assigned as a spare RO on day shift. You were unable to attend the pre-shift brief

The on-shift RO has an emergency requiring him to leave the site immediately. You have been directed to replace him for the remainder of the shift.

lAW OMM-OO 1 - 12, Minimum Equipment List and Shift Relief, which one of the following is required for the shift relief?

A. Perform a shift relief lAW Attachment 10.18, Middle of the Shift Turnover.

B. Perform a full shift relief IAW Attachment 10.11, RO/BOP turnover checklist.

C. Read and initial Attachment 10.7, Shift Recap/Shift Briefing Form, then relieve the watch.

D. Verbal turnover with CRSS approval. Read and sign Shift Recap/Shift Brief Attachment 10.7 after relieving the watch.

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__ QUESTION 002

FRP-P. 1, Response to Imminent Pressurized Thermal Shock, is entered from Critical Safety Function CSF-4, RCS Integrity, in response to which one of the following...

A. RED condition only

B. ORANGE condition only

C. RED or ORANGE condition

D. YELLOW or ORANGE condition

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__ QUESTION 003

Following a Reactor Trip and Safety Injection the STA repons that the SPDS is out of

service.

Critical Safety Function status information is provided manually and indicates as follows:
Subcriticality GREEN
Core Cooling YELLOW
Heat Sink YELLOW
Integrity GREEN
Containment GREEN
Inventory YELLOW

Which one of the following is the required monitoring frequency of CSFSTs in this condition?

A. Continuously

B. Once every 10-20 minutes

C. Once every 30-40 minutes

D. Not required unless a significant change in plant status occurs

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¼ QUESTION 004
Given the following plant conditions:

- Reactor power is at 100%
- Off-Site power is lost causing a reactor trip
- The Emergency Diesel Generators fail to start
- The Turbine Stop valves are not closed

Which one of the following describes an action that should be taken in this situation in accordance with EPP-001, 'Loss of All AC Power'?

A. Emergency Borate using MOV-350

B. Close the MSIVs and bypasses

C Manually run the turbine back with the limiter

D. Manually run the turbine back with the governor valve DECREASE button

QUESTION 005

The crew has completed OST-05 1, Reactor Coolant System Leakage Evaluation, (Every 72 hours during steady state operation, and within 12 hours after reaching steady state operation)

The following results are obtained:

- Identified leakage to PRT 2.7 6PM
- Unidentified leakage 0.8 6PM

The E&C Technician was directed to perform CP-014 to determine primary to secondary leakage and repons the following results:

- A SG 0.08 6PM
- BSG 0.566PM
- C 56 0.09 6PM

Which, if any, of the following Technical Specification RCS leak rate limits is being exceeded?

A. None

B. Identified

C. Unidentified

D. Primary to secondary

QUESTION 006

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You have been assigned to perforrn a procedure designated 'Multiple Use' IAW PRO-NGGC-0200.

Which one of the following identifies the use of this designation?

A. One section of the procedure may be 'Continuous use' while another section may be designated 'Reference use

B. One section may require dual verification of procedure steps while another section requires only one signoff per step

C. The performance of any one 'Continuous use' procedure section may require action in multiple locations

D. More than one individual will be required to complete the performance of the procedure

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QUESTION 007

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Given the following conditions:

- Mode I at 100% when a LBLOCA occurred
- A General Emergency has been in effect for 6 hours

Which one of the following is the TEDE limit for perforrning Life-Saving actions?

A. 5Rem

B. 25Rem

C. 75Rem

D. 25ORem

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QUESTION 008

You have been directed to perform a Surveillance Test (OST) that is part of a Post Maintenance Test (PMT).

Which one of the following describes a condition where a step in the OST may be marked 'N/A'?

A. To change the conditions or intent of the test

B. A precaution or limitation of a test is not applicable

C. To designate components that are not being used as part of the PMT

D. To identify required components that are Out of Service during the performance of a test

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QUESTION 009

Given the following conditions:

- A manual reactor trip is performed by the RO
- Reactor trip breaker A indicates open
- Reactor trip breaker B indicates closed
- Reactor power indicates 3% and decreasing

Which one of the following describes the condition of the reactor and the appropriate action?

A. The reactor is tripped. Continue in Path-i

B. The reactor is tripped. Emergency Boration is required per EPP-4, Reactor Trip Response

C. The reactor is not tripped. Transition to FR-S. 1, Response to Nuclear Power GenerationlATWS

D. The reactor is not tripped. Reattempt to manually trip the reactor and initiate turbine trip

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QUESTION 010

Due to a SBLOCA with numerous Safety Injection failures, the crew has entered FRP-C.2, Response to Degraded Core Cooling, based upon an ORANGE condition on the Core Cooling CSF Status Tree.

Which of the following Critical Safety Functions may exhibit a RED condition based solely upon the actions performed in FRP-C.2?

A. Subcriticality

B. Core Cooling

C. HeatSink

D. Integrity

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QUESTION 011

The plant is operating at 100 % power when a Loss of Off-Site power causes a reactor trip. Ten minutes after the trip, the following conditions exist:

- SO A Pressure 1040 psig and stable
- SO B Pressure 1035 psig and stable
- SO C Pressure 1040 psig and stable

- All RCPs are Off
- RCS Pressure is 2200 psig and stable
- Thot is approximately 5780F in all 3 loops and stable

- Core Exit TCs indicate approximately 5800F
- Tcold is approximately 5670F in all 3 loops and stable

Based on the above indications, what is the condition of the RCS?

A. Natural Circulation exists. The condenser steam dumps are maintaining heat removal

B. Natural Circulation does not exist. Heat removal may be established by opening the condenser steam dumps

C. Natural Circulation exists. SO PORVs are maintaining heat removal

D. Natural Circulation does not exist. Heat removal may be established by opening the SO PORVs

QUESTION 012

During an ATWS event from 100% power End of Life (EOL) conditions, which one of the following will provide the most negative reactivity insertion within the first minute?

A. RCS boration

B. Manual rod insertion

C. Manual Turbine Trip

D. Isolating a Faulted Steam Generator

QUESTION 013

The crew is performing a plant startup IAW GP-0003, Normal Plant Startup from Hot Shutdown to Critical.

- Tavg is 5400 F.
- Reactor Trip Breakers are OPEN
- The STEAM DUMP T-AVG CONTROL BLOCKED status light is illuminated

You have been directed to place Condenser Steam Dumps in service.

PC-464B, STEAM HEADER PRESS, is correctly adjusted to maintain RCS temperature.

Which one of the following contains the ONLY action(s) required to allow RCS

temperature to stabilize at current plant conditions using condenser steam dumps?

A. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS

B. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS, then place STEAM DUMP CONTROL switch to ON

C. Momentarily place STEAM DUMP CONTROL switch to BYPASS T-AVG INTLK, then place switch to OFF.

D. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS, then momentarily place STEAM DUMP CONTROL switch to BYPASS T-AVG INTLK

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QUESTION 014

The crew is performing a Natural Circulation Cooldown 'AW EPP-5, Natural Circulation Cooldown.

Which one of the following describes a potential consequence of exceeding the cooldown rate limit of 250F per hour?

A. Loss of Heat Sink due to excessive steaming rate

B. Pressurized Thermal Shock due to uncontrolled cooldown

C. Uncontrolled pressurizer level increase caused by RCS void formation

D. Uncontrolled pressurizer level decrease caused by RCS void formation

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QUESTION 015

Given the following conditions:

- RNP is in Co]d Shutdown for refueling
- Core reload from the SFP to containment is in progress
- A fuel assembly has just been placed in the SFP upender to send to containment

Which one of the following is a interlock that must be met in order to send the Conveyor Car to containment?

A. Conveyor Car control must be transferred to the SFP

B. The SFP bridge must be positioned out of the SFP Transfer Canal area

C. Both the CV and the SFP upenders must be in the horizontal (down) position

D. The CV manipulator crane must be positioned out of the CV transfer canal area

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QUESTION 016

Given the following conditions:

- Mode 1 at 100% RTP
- You have been directed to enter containment to perform a task.
- Your RWP states that your EPD dose alarm will be set at 80 rnrem and your rate alarm will be set at 160 mrern'hr
- When you log in to the Automated Access Control System, the computer screen warns you that RIMS is not operational.

Which one of the following describes the settings for your EPD dose and rate alarms and what is the appropriate response to a dose alarm while you are performing a task?

A. Dose - 50 mrem; Rate - 100 mrern'hr. Stop work, exit the area, notify Health Physics

B. Dose - 25 mrem; Rate - 50 mrent'hr. Stop work, exit the area, notify Health Physics

C. Dose - 80 rnrem; Rate - 160 mrem'hr. Stop work, exit the area, notify Health Physics

D. Dose - 40 mrem; Rate - 80 mrent'hr. Stop work, exit the area, notify Health Physics

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QUESTION 017

Which one of the following describes the correct sequence for initiating a Containment Purge for Refueling Operations?

A. Place the Purge or Refuel valves control switch in the REFUEL position, place a CV Purge fan control switch in START, verify purge supply and exhaust valves and containment intake damper open, verify fan starts.

B. Place a CV Purge fan control switch in START, verify containment intake damper opens, verify fan starts, verify purge supply and exhaust valves open. Place the Purge or Refuel valves control switch in the REFUEL position.

C. Place the Purge or Refuel valves control switch in the REFUEL position, place a CV Purge fan control switch in START, verify fan starts, verify purge supply and exhaust valves and containment intake damper open.

D. Place a CV Purge fan control switch in START, verify fan starts, verify containment intake damper and purge supply and exhaust valves open. Place the Purge or Refuel valves control switch in the REFUEL position.

QUESTION 018

Given the fo]lowing conditions:

- The operators are responding to a LOCA 'AW PATH-i last column
- FOLDOUT "B" is in effect
- Containment pressure is S psig and slowly decreasing
- RCS pressure is 100 psig
- Supplement "D" Components are capable of recirculation
- Auxiliary Building radiation levels are normal
- RHR flow is >3000 gpm
- RWST level is 28% and decreasing

Which one of the following transitions will be made?

A. EPP-008, Post LOCA Cooldown and Depressurization

B. EPP-009, Transfer to Cold Leg Recirculation

C. EPP-015, Loss of Emergency Coolant Recirculation

D. EPP-020, LOCA Outside Containment

QUESTION 019

The crew is performing actions of EPP-20, LOCA Olltside Containment.

All actions have been performed, and attempts to isolate the leak have been unsuccessful.

Which one of the following procedures will provide the actions that will mitigate this event?

A. PATH-i Diagnostics

B. EPP-7, SI Termination

C. EPP-8, Post LOCA Cooldown and Depressurization

D. EPP- 15, Loss of Emergency Coolant Recirculation

QUESTION 020

Given the following plant conditions:

- A tornado has touched down inside the protected area
- A series of transients as a resu]t of the strike caused a LBLOCA
- The SUT was destroyed by a tornadic missile
- Containment pressure is 23 psig

Which one of the following describes the operation of the "B" Component Cooling Water pump?

The pump will

A. not automatically start and cannot be manually started

B. not automatically start, but can be manually started

C. only start if a low CCW system pressure condition is sensed

D. automatical]y start on the blackout sequencer

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QUESTION 021

Given the following plant conditions:

- Mode 1 at 100% RTP
- Breaker 52/17, SUT 4KV Bus 3 Supply, trips on a fault

Which one of the following describes the expected response of the Service Water System?

Both Service Water Booster Pumps and

A. Only Service Water Pump "C" will be automatically started

B. Service Water Pumps "C" and "D" will be automatically started

C. Service Water Pump "A" and "B" will be automatically started

D. Only Service Water Pump "A" will be automatically started

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QUESTION 022

Given the following conditions:

- A Reactor Shutdown is in progress
- APP-005-B2, N-35 LOSS OF COMP VOLT, is received
- Intermediate Range Channel N-35 indicates 6 X ia10 amps
- Intermediate Range Channel N-36 indicates 1 X la" amps
- Source Range Channel N-5 1 indicates 80 CPS
- Source Range Channel N-52 indicates 90 CPS

Which one of the fo]lowing correctly describes the action required to obtain Source Range indication?

A. Remove the Instrument Power fuses from N-36

B. Remove the control power fuses from N-36

C. Push both 'Source Range Logic Trip Defeat' buttons

D. Push both 'Permissive P-6 Defeat' buttons

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QUESTION 023

During operation at power steam generator tube leakage is detected and estimated at 200 gpm by the reactor operator. The following plant indications existed at that time:

- RCS pressure - 2150 psig and lowering
- Reactor Power - 80%
- SO Pressures - 950 psig
- PZR Level - 42% and lowering

The unit is tripped and plant parameters following the trip are:

- RCS pressure - 1625 psig and lowering
- Reactor Power -0%
- SO Pressures - 1025 psig
- PZR Level - 13% and lowering

Based on the two sets of given data, which one of the following describes the approximate primary to secondary leakage following the trip

A. l00gpm
B. 200gpm
C. l4Ogpm
D. 67gpm

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QUESTION 024

Given the following conditions:

- The plant is in Cold Shutdown
- RHR 'B' pump running aligned for Shutdown Cooling
- RCS temperature is 1850F
- RCS pressure is 365 psig
- PT-403, RCS NR Pressure, fails HIGH

Which one of the following describes the effect on plant operation?

A. RHR-750 and 751, Loop 2 RHR Suction Valves, automatically close

B. RRR-750 and 751, Loop 2 RHR Suction Valves, remain open but the RCS pressure open permissive is lost

C. PCV-145, Low Pressure Letdown Pressure Control Valve, closes to restore pressure to setpoint

D. PCV-145, Low Pressure Letdown Pressure Control Valve, opens to restore pressure to setpoint

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QUESTION 025

Given the following conditions:

- Mode 1 at 100% RTP

- CWP 'A' and 'B' are running. CWP 'C' has just been returned to service after maintenance, and is available for start

CWP 'A' trips. Condenser backpressure rises from 4" Hg absolute to 5,5" Hg absolute and has stabilized.

Which one of the following provides the crew's required immediate operator actions?

A. Start 'C' Circ Water Pump

B. Verify V6-50A, 'A' Circ Water pump discharge closed

C. Verify standby vacuum pump is running

D. Secure any liquid radwaste release in progress

QUESTION 026

Given the following conditions:

- The unit is at 100% power
- Battery Charger 'A' is supplying Battery 'A' and its associated DC Bus loads
- Annunciator APP-036-Dl 'BATTERY A/Al TROUBLE' has just alarmed
- The AO reports the cause of the trouble is a ground on DC Bus 'A'
- Based upon visual inspection, the AO believes the ground may be on Battery 'A'
- Engineering recommends that Battery 'A' be disconnected from DC Bus 'A'

Which one of the following describes the appropriate action while attempting to isolate the ground?

A. Supply the 'A' DC Bus with the 'A' Charger because it is the preferred supply lAW OP-601, DC Supply System

B. Supp]y the 'A' DC Bus with the 'A-i' Charger because it is the preferred supply lAW OP-601, DC Supply System

C. Supply the 'A' DC Bus with the 'A' Charger because it is the only charger available to supply DC Bus 'A' while disconnected from Battery 'A'

D. Supply the 'A' DC Bus with the 'A-i' Charger because it is the only charger available to supply DC Bus 'A' while disconnected from Battery 'A'

QUESTION 027

Given the following conditions:

- The reactor has tripped.
- Two stuck rods have been identified.

The crew is performing EPP-4, Reactor Trip Response.

The procedure directs boration to which one of the following conditions, and why?

A. Hot Shutdown, because boration to Rot Shutdown conditions assures reactor shutdown regardless of the number of control rods not fully inserted

B. Cold Shutdown, because boration to Cold Shutdown conditions assures reactor shutdown regardless of the number of control rods not fully inserted

C. Rot Shutdown, because boration to Rot Shutdown conditions is required to

compensate for the worth of the most reactive stuck rod

D. Cold Shutdown, because boration to Cold Shutdown conditions is required to compensate for the worth of the most reactive stuck rod

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QUESTION 028

Given the following conditions:

An ATWS has occurred. The crew is performing action contained in FRP-S. 1, Response to Nuclear Power GenerationlATWS.

The RO has initiated boration as follows:

- CVC-310B, Loop 2 Cold Leg CHO is open
- HIC-121, Charging Flow controller demand set to 0%
- 2 Charging pumps running at full speed
- 1 Boric Acid pump aligned for blend is running
- MOV-350, Boric Acid to Charging pump suction is OPEN

Which one of the following describes the boric acid flow indication that will be present?

A. No boric acid flow will be indicated

B. Fl-il 0, Boric Acid Bypass Flow, will provide the only indication of boric acid flow

C. FR- 113, Boric Acid Flow Recorder, will provide the only indication of boric acid flow

D. Both Fl-i 10 and FR-i 13 will indicate boric acid flow

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__ QUESTION 029

Which of the following describes the basis for the Component Cooling Water system valve realignment upon receipt of a Containment Isolation Phase 'B' actuation?

A. Isolates additional potential release paths from containment

B. Reduces heat load on CCW system by eliminating unnecessary cooling requirements

C. Reduces Diesel Generator loading requirements with Containment Spray in operation

D. Reduces the severity of a containment pressure transient by eliminating potential energy sources

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__ QUESTION 030

Which one of the following describes the function of the Intermediate Range High Level Rod Stop?

Blocks rod withdrawal in MANUAL and...

A. is automatically defeated above P-b

B. must be manually defeated above P-b

C. is automatically defeated above P-6

D. must be manually defeated above P-6

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QUESTION 031

Given the following conditions:

- The plant is in Mode 6
- Fuel moves are in progress
- The Conveyor Car is in the SEP

R-5, SPENT FUEL Pif AREA radiation monitor goes into alarm

APP-036-B6, SPENT FUEL PIT LOW LEVEL, is illuminated

The crew is performing action contained in AOP-005, Radiation Monitoring. 'AW Attachment 5, the crew is attempting to determine the source of the SFP level decrease.

Which one of the following describes the reason the crew will be directed to move the Conveyor Car to the CV?

A. Allows isolation of the SEP from the Refueling Cavity by closing the Transfer Tube Gate Valve

B. Reduce SEP radiation levels by reducing the refueling equipment in the SEP

C. Allows the weir gate to be installed to isolate the SEP from the Refueling Cavity

D Ensures control of refueling equipment will be maintained by the Refueling SRO in the CV.

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QUESTION 032

Given the following conditions:

A High Process Radiation monitor alarm is received in the control room.

The RO acknowledges the alarm at the Westronics recorder at Console 2. The red LED is lit above R-3 lA, Main Steam Line radiation monitor.

Which one of the following describes how the RO will obtain a plot of the alarming radiation monitor?

A. Manually select the Group number containing R-3 lA. All monitors in the group will print out in red.

B. The Group containing R-3 lA will automatically begin plotting. All monitors in the group will print out in red.

C. Manually select the Group number containing R-3 1 A. All monitors in the group will print out in black with the exception of the alarming monitor, which prints out in red.

D. The Group containing R-3 lA will automatically begin plotting. All monitors in the group will print out in black with the exception of the alarming monitor, which prints out in red.

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QUESTION 033

Which one of the following describes the RCP breaker interlock and indication associated with the Oil Lift System?

A. Oil lift pump running for greater than 2 minutes. White light illuminates at 650 psig lift pressure.

B. Oil lift pump running for greater than 2 minutes. White light illuminates at 600 psig lift pressure.

C. Oil lift pump running with pressure greater then 600 psig. White light illuminates at 650 psig lift pressure.

D. Oil lift pump running with pressure greater than 650 psig. White light illuminates at 600 psig.

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QUESTION 034

Given the following conditions:

- Mode 1 at 100% RTP
- No scheduled releases are in progress
- A small leak develops from the bottom of Waste Condensate Tank 'A'
- All ventilation systems are in a normal configuration

Which one of the following identifies an indication that would alert the operators of a leak in progress?

An increase in the level of monitor:

A. R-3, PASS Panel Area Monitor

B. R-l8, Waste Disposal System Liquid Effluent Monitor

C. R-4, Charging Pump Room Area Monitor

D. R-14C, Plant Effluent Noble Gas, Low Range Monitor

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QUESTION 035

Given the following conditions:

- The unit is initially in a normal 100% power lineup
- The turbine trips due to a loss of condenser vacuum

Which one of the following describes the turbine control system signals which will send a trip signal to the Reactor Protection System?

A. 1/3 63A5T relays <45 psig or 2/4 governor valves c]osed

B. 2/3 63A5T relays <45 psig or 4/4 governor valves c]osed

C. 1/3 63A5T relays <45 psig or 1/2 stop valves closed

D. 2/3 63A5T relays <45 psig or 2/2 stop valves closed

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QUESTION 036

Given the following conditions:

- Mode 1 at 100% RTP
- APP 002-B7, CV NAR RANGE RYLO PRESS illuminates
- CV Pressure indicates -0.4 psig, lowering slowly

Which one of the following describes the action necessary to clear the alarm lAW OP-921, Containment Air Handling?

A. Open Containment Pressure Relief Valves V12-10 and V12-1 1 until pressure is restored

B. Close Containment Pressure Relief Valves Vi 2-10 and Vi 2-11 until pressure is restored

C. Open Containment Vacuum Relief Valves V12-12 and V12-13 until pressure is restored

D. C]ose Containment Vacuum Relief Valves V 12-12 and V 12-13 until pressure is

restored

QUESTION 037

Given the following conditions:

- Mode 1 at 35% RTP
- Breaker 52/10, 4KV Bus 1 to 4KV Bus 2 Tie, trips on fault

Which one of the following describes the automatic response of the electrical distribution system?

A. 4KV Bus 2 deenergizes, but is automatically picked up by the SUT through 'fast transfer'. EDO 'A' starts, but its output breaker does not close because voltage was only lost for 2 seconds

B. 4KV Bus 2 deenergizes and remains deenergized. EDO 'A' starts and picks up El. 'A' train SBO loads sequence on

C. 4KV Bus 2 deenergizes and remains deenergized. EDG 'A' starts and picks up El. No SBO loads sequence because E2 always had voltage, so there was not a loss of 'all AC power

D. 4KV Bus 2 deenergizes, but is automatically picked up by the SUT through 'fast transfer'. EDG 'A' does not start because voltage was only lost for 2 seconds

QUESTION 038

Given the following conditions:

- The unit has tripped due to a loss of condenser pressure
- The SUT had a phase to phase short and the primary side melted
- EDO 'A' failed to start and cannot be restarted
- EDO 'B' started and is carrying its emergency bus

Which one of the following describes the expected status of MDAFW pump 'A' breaker?

A. Shut because the SBO sequencer has cycled once and there is voltage present on its supply bus

B. Open because the SBO sequencer has cycled once and there is no voltage present on its supply bus

C. Cycling due to the SBO sequencer because there is no voltage present on its supply bus

D. Open because the SBO sequencer did not activate because all AC power was not lost

QUESTION 039

Given the following conditions:

- Mode 1 at 100% RTP
- An electrical fault occurs which results in a loss of power to Instrument Bus 3

Which one of the following describes the impact that the loss of Instrument Bus 3 has on

the automatic operation of the Engineered Safeguards Features (ESF) Actuation System?

A. Neither train of the Engineered Safeguards Actuation System is affected

B. The sequencers will not be able to automatically start any Train 'B' Engineered Safeguards loads

C. The sequencers will not be able to automatically start any Train 'A' Engineered Safeguards loads

D. The sequencers will not be able to automatically start any Train 'A' or 'B' Engineered Safeguards loads

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QUESTION 040

Given the following conditions:

- Mode6
- Core offload in progress lAW FMP-019, Core and Insert Shuffle
- RVE-lA, CV PURGE EXHAUST UNIT, is running
- The REFUEL-PURGE selector switch on the RTGB is in REFUEL
- The HEPA filter downstream of V12-8, PURGE EXHAUST VALVE, becomes clogged

Which one of the fol]owing describes the system response as airflow through HVE- 1 A slowly lowers?

A. APP-O1O-B6, HVE-lAIB AIRFLOW LOSTIOVLD, will illuminate. V12-8, PURGE EXHAUST VALVE, will shut. HVE-lB will ailtomatically start

B. HVE-IA will de-energize and the REFUEL-PURGE control circuit will automatically shift into the PURGE mode. HVE-lB will automatically start

C. APP-OlO-B6, HVE-lA/B AIRFLOW LOSTIOVLD, will illuminate. HVE-IA will de-energize, and HVE-lB will automatically start

D. R-1 1~I2, CV PARTICULATE AND NOBLE GAS, Low flow alarm due to lower than expected CV exhaust flow

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 041

Given the following plant conditions:

- CST is empty due to a weld failure on the tank
- RCS temperature is 4950 F
- AEW supply has been switched to the deepwell pumps
- The Steam Driven AFW Pump is out of service for maintenance
- Both Motor Driven AFW pumps are running
- The Motor Driven AFW Pump Discharge Flow Control Valves, FIC-1424 and FIC-1425, have been set to 200 gpm

Which one of the following provides the minimum number of deepwell pumps required to support this amount of AFW flow?

A. One(1)

B. Two(2)

C. Three (3)

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D. Not possible

QUESTION 042

Given the following conditions:

The plant has experienced a trip from 100% RTP
All SOs indicate 6% NR level

Upon initiation of AFW, which one of the following correctly describes the automatic response of the AFW system under these conditions?

A. The normally closed MDAFW pump discharge flow control valves (FCV-1424 and 1425) fully open

B. The normally open SDAFW pump discharge flow control valve (FCV-6416) throttles in the closed direction

C. The normally closed SDAFW pump discharge flow control valve (FCV-6416) throttles in the open direction

D. The normally open MDAFW pump discharge flow control valves (FCV-1424 and 1425) throttle in the closed direction

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

___ QUESTION 043

Given the fol]owing conditions:

- The plant is in Hot Shutdown
- AFW pump 'A' is running
- A small feedline break occurs between FCV-1424, 'A' AFW pump FCV, and isolation valve V2-16B (SO 'B' AFW isolation valve)

The RO closes FCV-1424 and the break flow stops.

A clearance is initiated to isolate the leak from all water sources.

Which one of the following describes an outcome of this event?

A. AFW flow from 'B' MDAFW pump will be available to all SOs

B. AFW flow from 'B' MDAFW pump will be available to 'A' and 'C' SOs only

C. AFW flow from 'B' MDAFW pump will be available to 'A' SO only

D. AFW flow from 'B' MDAFW pump will be available to 'C' SO only

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

___ QUESTION 044

A Loss of DC Bus 'A' has occurred.

The crew is performing action contained in EPP-26, Loss of DC Bus A.

480 Volt Bus 2B is being energized from 480 Volt Bus 3.

Which one of the fol]owing describes the reason that the control switch for the tie breaker is held in the CLOSE position for 5 seconds?

A. Ensures energization of undervoltage relays

B. Ensures deenergization of undervoltage relays

C. Ensures energization of Amptector overcurrent devices

D. Ensures deenergization of Amptector overcurrent devices

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 045

Given the following plant conditions:

- The plant is operating at 100% power
- Rod D-8 (Control Bank D) rod bottom light illuminates
- IRPI forD-S reads 2 inches
- APP-005-F2, ROD BOTTOM ROD DROP, illuminates
- Control Bank D is at 218 steps
- Power Range NIs indicate 100%

The crew enters AOP-001, Malfunction of Reactor Control System

Which one of the following provides the section of AOP-00 1 that will be used to respond to the above conditions?

A. Section A, Dropped Rod
B. Section B, Immovable/Misaligned Rod
__ C. Section C, Continuous Rod Motion
D. Section D, Individual Rod Position Indication Malfunction

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 046

Given the following conditions:

The plant is operating at 100% power when a Loss of Off-Site Power and Reactor Trip occurs.

All equipment operates as expected.

Which one of the following describes the status of cooling water to RCPs Five (5) minutes into the event?

A. Seal Injection will provide the only cooling water to the RCP therrnal barrier heat exchangers

B. CCW Pumps 'A' and 'B' running to provide cooling to RCP bearings

C. CCW Pumps 'B' and 'C' running to provide cooling to RCP bearings

D. CCW Pumps 'A', 'B', and 'C' running to provide cooling to RCP bearings

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R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 047

Given the following conditions:

The plant is operating at 100% power. Rod Control is in MANUAL. All other control systems are operating in automatic.

Which one of the following describes the effect of temperature changes in the Chemical and Volume Control System (CVCS)?

A. As NRHX outlet temperature INCREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS boration

B. As NRHX outlet temperature INCREASES, ion exchanger affinity for boron DECREASES, resulting in a potential RCS dilution

C. As NRHX outlet temperature DECREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS dilution

D. As NRRX outlet temperature DECREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS boration

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 048

Given the following conditions:

The plant is operating at 100% power. The CVCS is in a normal lineup with all equipment in service.

Which one of the following describes the operation of Emergency Makeup to Charging suction valve, LCV-1 15B?

A. Automatically opens when BOTH LT-1 12 and LT-1 15, VCT level transmitters, indicate Low VCT level.
Interlocked with VC~ Outlet Valve LCV-1 15C so that both valves cannot be open at the same time

B. Automatical]y opens when EITHER LT-1 12 or LT-1 15, VCT level transmitters, indicate Low VCT level.
Interlocked with VCT Outlet Valve LCV-1 15C so that both valves cannot be closed at the same time

C. Automatically opens when BOTH LT-1 12 and LT-1 15, VCT level transmitters, indicate Low VCT level.
Interlocked with VCT Outlet Valve LCV-1 15C so that both valves cannot be closed at the same time

D. Automatically opens when EITHER LT-1 12 or LT-1 15, VCT level transmitters, indicate Low VCT level.
Interlocked with VCT Outlet Valve LCV-1 15C so that both valves cannot be open at the same time

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 049

Given the following plant conditions:

- The plant was Mode 1 at 100% RTP
- AlI Systems are in their normal configuration
- A Loss of Off-Site Power occuned and both EDG's auto started
- Service Water pumps have been started by the blackout sequencer
- An SI occurs immediately after SW pumps started

Which ONE (1) of the following describes the response to this event?

The Blackout sequence will:

A. continue to completion, any additional equipment will be started by the SI sequence.

B continue to completion, any additional equipment will require a manual start.

C. stop, all loads will be stripped and restarted by the SI sequence.

D. stop, the SI sequence will start the required additional loads.

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 050

Given the following conditions:

- Mode 1 at 14% RTP

- POWER ABOVE P-b Permissive Status light is ILLUMINATED
- The RO presses the IR LOGIC DEFEAT TRAIN A pushbutton

Which one of the following describes the effect on the operation of the plant?

A. INTERM RANGE TRIP BLOCKED Permissive Status light is ILLUMINATED. Outward Rod Motion will NOT be blocked above 20% equivalent power on N-36

B. INTERM RANGE TRIP BLOCKED Permissive Status light is EXTINGUISHED. Outward Rod Motion will NOT be blocked above 20% equivalent power on N-36

C. INTERM RANGE TRIP BLOCKED Permissive Status light is ILLUMINATED. Outward Rod Motion will be blocked above 20% equivalent power on N-36

D. INTERM RANGE TRIP BLOCKED Permissive Status light is EXTINGUISHED. Outward Rod Motion will be blocked above 20% equivalent power on N-36

H.B Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 051

Given the following conditions:

- A plant startup is in progress with reactor power at 4%
- The Main Generator is being paralleled to the grid
- Power is lost to Instrument Bus 2

Which one of the following describes the plant response for loss of power to Instrument Bus 2?

A. Reactor Trip due failed Source Range channel

B. Reactor Trip due to failed Interrnediate Range channel

C. Turbine Reference Runback due to Power Range failure

D. No effect because Reactor Power is less than the P-b setpoint

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 052

Given the following conditions:

The p]ant is operating at 100% power. All systems are in their normal alignments.

Which one of the following describes the expected RVLIS indication on the Inadequate Core Cooling Monitor (ICCM)?

	Dynamic Head	Full Ran2e	Ugner Range
A.	110%	108%	108%
B.	RCPON	108%	108%
C.	110%	RCPON	RCPON
D.	RCPON	RCPON	RCPON

R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

¾ QUESTION 053

Given the following conditions:

A Large Break LOCA has occurred.

- Train 'A' Engineered Safeguards did not automatically actuate
- Train 'B' Engineered Safeguards components automatically actuated with the exception of 'B' CV Spray Pump
- Containment Spray Pump 'A' is OOS for maintenance
- Containment Spray Pump 'B' failed upon automatic initiation and cannot be restarted.

Which one of the following describes the minimum action required to ensure containment pressure remains below its design limit?

A. Verify either Containment Air Recirc fan RVH-3 OR RVH-4 is running

B. Verify both Containment Air Recirc fans HVR-3 and HVH-4 are running

C. Start either Containment Air Recirc fan RVR-1 or HVR-2.

D. Start both Containment Air Recirc fans HVH-1 and HVH-2.

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QUESTION 054

Given the fo]lowing conditions:

The plant is operating at 100% power.

Due to a loss of Containment HVAC, containment temperature has risen from 970F to 1 190F. Actions are in progress to restore containment RVAC.

If the temperature continues to rise in containment, which one of the following describes the effect on pressurizer level indication?

A. The controlling pressurizer level channel will indicate slightly lower than actual level, and remain higher than the cold-calibrated pressurizer level instrument

B. The controlling pressurizer level channel will indicate slightly higher than actual level, and remain higher than the cold-calibrated pressurizer level instrument

C. The controlling pressurizer level channel wil] indicate slightly lower than actual level, and remain lower than the cold-calibrated pressurizer level instrument

D. The controlling pressurizer level channel will indicate slightly higher than actual level, and remain lower than the cold-calibrated pressurizer level instrument

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 055

Given the following conditions:

- Mode 1 at 45% RTP
- 'B' Condensate Pump and 'B' Main Feedwater Pump are operating
- Breaker 52/20, UNr[AUX TO 4KV BUS 4 BKR, trips on fault
- Plant equipment operates as designed

Which one of the following describes the impact on the plant and the action required to restore secondary inventory?

A. Feedwater is lost due to Feedwater isolation and Feedwater pump trip on low Tave with Reactor Trip. AFW will be manually restored in FRP-H. 1, Loss of Secondary Heat Sink

B. 'B' Condensate pump and 'B' MFW pump will be lost due to loss of bus 4. Verify 'A' Condensate pump and 'A' MEW pumps automatically start on low discharge pressure lAW AOP-010, Condensateffeedwater Malfunctions

C. 'B' Condensate pump and 'B' MFW pump will be lost due to loss of Bus 4. AFW flow will be verified in PATH-i or EPP-4, Reactor Trip Response

D. 'B' Condensate pump and 'B' MFW pump will be lost due to loss of Bus 4. 'A' Condensate pump will automatically start but A' MFW pump must be manually restarted in PATH-i or EPP-4, Reactor Trip Response

QUESTION 056

Given the following conditions:

The reactor tripped from 100% power.

- A Loss of Heat Sink has occuned
- Safety Injection is actuated
- The crew is performing actions contained in FRP-H. 1, Loss of Secondary Heat Sink
- AFW flow cannot be restored
- 'A' Condensate pump has been started

Which one of the following describes the MINIMUM action required to start a Main Feedwater pump?

A. Place all FEEDWATER ISOLATION Key Switches in the OVRDIRESET position

B. Reset Safety Injection and place all FEEDWATER ISOLATION Key Switches in the OVRDIRESET position

C. Close Reactor Trip Breakers and place all FEEDWATER ISOLATION Key Switches in the OVRDIRESET position

D. Close Reactor Trip Breakers, Reset Safety Injection, and place all FEEDWATER ISOLATION Key Switches in the OVRDIRESET position

QUESTION 057

The plant is in Mode 1, 100% RTP.

Which one of the following Feedwater System conditions requires entry into Technical Specifications?

A. FW-24, FW TO SO 'A' DRAIN, is found locked closed

B. FW-201, SO WLU ISOL TO AND FROM SO 'A' is found locked closed

C. FCVA79, SO 'A' FWRV BYPASS, is stuck 20% open and cannot be moved

D. FCVA78, SO 'A' FWRV is being controlled in MANUAL from the RTGB due to 1055 of an automatic SO level control input

QUESTION 058

Given the following conditions:

The plant is operating at 100% RTP.

The following radiation monitors go into alarm:

- R-15, Condenser Air Ejector Gas Monitor
- R-19A, SO Sample Radiation Monitor
- R-37, Condensate Polisher Waste Effluent Monitor

All other Radiation Monitors are normal.

Which one of the fol]owing describes the plant response to these indications?

A. FCV-1933A and B, SO A Blowdown Sample Isolation Valves CLOSE.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

B. FCV-1933A and B, SO A Blowdown Sample Isolation Valves CLOSE.
Vi -31, Blowdown Isolation Valve to catch basin, CLOSES.

C. V 1-31, Blowdown Isolation Valve to catch basin, CLOSES.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

D. V1-31, Blowdown Isolation Valve to catch basin, CLOSES.
FCV-1933A and B, SO A Blowdown Sample Isolation Valves CLOSE.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

QUESTION 059

A Gaseous Waste Discharge is being planned.

The calculated setpoint for Waste Gas Decay Tank Release Isolation valve, RCV-014, is 35%. RCV-014 is inadvertently set to 55%.

Which one of the following describes the potential effect on the plant?

A. PCV-104O, Pressure Reducing Release discharge, will close due to a low pressure on the WGDT

B. RCV-014 will close due to a low DP from the WGDT to the Plant Stack

C. RCV-014 will close due to a high radiation on the Plant Stack, Noble Gas Monitor, R- 1 4C

D. Cover Gas Pressure Control Valve PCV-1027, Cover Gas Reader Pressure control valve, will close to prevent overpressure on the WGDT

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 060

Plant Cooldown to 1400 is in progress.

Which one of the following actions during the cooldown is provided to minimize the probability of a brittle fracture event?

A. Removing Safety Injection pumps from service

B. Maintaining Letdown flow at maximum during the RCS cooldown

C. Maintaining RCPs running for as long as possible during the cooldown

D. Maintaining Safety Injection Accumulators in service until RCS pressure is 600 psig

R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 061

Given the following conditions:

- Reactor power is at 68%.
- The EH Turbine Control is in the IMP OUT position

One Turbine control valve drifts OPEN approximately 10% from its initial position.

Assuming no action by the crew, which one of the following describes the initial effect of the valve failure?

	Steam Pressure	RCS Tave	Reactor Power
A.	Increase	Increase	Decrease
B.	Increase	Decrease	Increase
C.	Decrease	Increase	Decrease
D.	Decrease	Decrease	Increase

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 062

Given the following conditions:

- Plant is operating at 50% RTP
- 'A' Train of Feedwater is in service
- 'B' Condensate pump has just been started IAW GP-005, Power Operation
- 'A' Main Feedwater Pump trips on overload

Which one of the following describes the initial response of the Feedwater System with no operator action?

A. All SO Feedwater regulating valves throttle closed. 'B' Main Feedwater pump must be manually started

B. All SO Feedwater regulating valves throttle closed. 'B' Main Feedwater pump will automatically start

C. All SO Feedwater regulating valves throttle open. 'B' Main Feedwater pump must be manually started

D. All SO Feedwater regulating valves throttle open. 'B' Main Feedwater pump will automatically start

R.B. Robinson
Site Specific NRC Written Exarnination
Reactor Operator

QUESTION 063

What is the basis for maintaining PRT level less than the high level alarm setpoint of 83% and when does it apply?

The basis for this level is to minimize the possibility of thermal shocking the...

A. PRT Rupture Discs and affecting their rupture pressure. It only applies when PRT temperature is above 200 degrees

B. PRT Rupture Discs and affecting their rupture pressure. It applies at all times.

C. Pressurizer Safeties and PORVs which could cause them to leak. It only applies when Pressurizer temperature is above 200 degrees

D. Pressurizer Safeties and PORVs which could cause them to leak. It applies at all times.

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 064

Given the following plant conditions:

- A plant cooldown is in progress.
- RCS temperature is 3570F.
- RCS Pressure is 370 psig
- Both PORV OVERPRESSURE PROTECTION Permissive switches have been placed in LOW-PRESSURE position

Following the switch alignment, the following alarm is received in the control room:

- APP-003-A3, PCV-456 LP PROT ACTITROUB

Which one of the following is the likely cause of this alarm?

A. RC-535, PORV BLOCK, is closed

B. A temperature input to the actuation circuitry has failed high

C. A pressure input to the actuation circuitry has failed low

D. RCS Pressure is too high to place LTOPP in service. PORV operation has occurred

QUESTION 065

Given the following conditions:

The plant is operating in Mode 1, 100% RTP.

In preparation for refueling, fuel moves are taking place in the Spent Fuel Pit.

R- 1, Control Room Area Radiation Monitor, fails its channel check. Repairs are estimated to take 8 hours.

Using the reference provided, which one of the following actions, if any, must be taken?

A. No action required for 7 days

B. Immediately suspend fuel movement in the Spent Fuel Pit

C. Immediately place one CREFS Train in Emergency Pressurization Mode

D. Initiate action to place the plant in Mode 3 within 6 hours and Mode 5 within 36 hours

QUESTION 066

Given the fol]owing conditions:

- The plant is in Mode 6 with fuel movement in progress. (Core offload to SFP)
- The Manipulator Crane is over the core with a fuel assembly
- The Refueling Cavity level is 20 inches below the operating deck
- A report is received from the CV that the Refueling Cavity water level is decreasing
- The crew has entered AOP-020, Section B, Loss of RHR-Vessel Head Off

Which one of the following describes the proper location for the fuel assembly in transit?

A. Its original core location

B. Its designated SFP location

C. Manipulator Crane Mast

D. North Refueling Cavity area away from the core

QUESTION 067

Given the following conditions:

A reactor trip has occurred.

The crew has entered FRP-H.2, Response to Steam Generator Overpressure, based upon a YELLOW condition on the Heat Sink Status Tree.

- 'A' SG pressure indicates 1150 psig
- 'B' and 'C' SO pressures indicate 1010 psig
- 'A' SO level is 65%
- APP-002-F7, INST AIR RDR LO PRESS, is lit
- Instrument Air Header Pressure is 30 psig

Which one of the following actions will be required to mitigate the SO Overpressure condition?

A. Initiate AFW flow

B. Locally operate 'A' SO PORV to dump steam

C. Go to FRP-H.3, Response to SG High Level, to reduce pressure by reducing SO level

D. Align Nitrogen to SO PORVs using AOP-017, Loss of Instrument Air, and attempt to dump steam

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 068

Which one of the following is true concerning depressurizing the RCS lAW EPP-15, Loss of Emergency Coolant Recirculation?

A. To minimize RCS leakage, depressurize the RCS until Pressurizer level is >71% OR RCS Subcooling is between 350 F and 450 F

B. To increase SI Injection flow, depressurize the RCS until Pressurizer level is >90% OR RCS Subcooling is between 250 F and 350 F

C. To ensure SI Accumulator injection, depressurize the RCS until Pressurizer level is >71% OR RCS Subcooling is between 350 F and 450 F

D. To allow RHR to be placed in service, depressurize the RCS until Pressurizer level is >90% OR RCS Subcooling is between 250 F and 350 F

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 069

Which one of the following describes two objectives of procedure EPP-015, Loss of Emergency Coolant Recirculation?

A. Maximize injection flow and initiate makeup to the RWST

B. Delay depletion of the RWST and stabilize RCS temperature

C. Restore Emergency Coolant recirculation capability and stabilize RCS temperature

D. Delay depletion of the RWST and restore Emergency Coolant recirculation capability

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 070

Given the following conditions:

- RCS pressure is 1000 psig and trending down

- SG 'A' level is 5% and trending down, pressure is 500 psig and trending down slowly
- SO 'B' level is 7% and trending down, pressure is 480 psig and trending down slowly
- SO 'C' level is 3% and trending down, pressure is 490 psig and trending down slowly
- Total AFW flow is 140 6PM
- Containment pressure is 4 psig
- SPDS has been reset. The STA is monitoring CSF Status Trees

Which one of the following procedures will be entered under these conditions?

A. EPP-01 1, Faulted Steam Generator Isolation

B. FRP-R. 1 Response to Loss of Secondary Heat Sink

C. FRP-R.5, Response to Steam Generator Low Level

•D. EPP-0 16, Uncontrolled Depressurization of All Steam Generators

QUESTION 071

Given the following conditions:

A LOCA has occurred. The crew is performing the actions of PATH-i.

The following conditions exist:

- RCS Pressure is 500 psig
- RCS temperature is 4500F
- SG NR levels are Off-Scale Low
- SO Pressures are 650 psig and trending down
- AFW flow is 450 6PM
- Pressurizer level is Off-Scale Low
- Containment Pressure is 25 psig
- SPDS has been reset. The STA is monitoring CSF Status Trees

Which one of the following procedures will the crew perforrn next for this event?

A. Continue in PATH- 1 for the LOCA

B. PRP4.l, Response to High Containment Pressure

C. FRP-R. 1, Response to Loss of Secondary Heat Sink

D. EPP-0 16, Uncontrolled Depressurization of all Steam Generators

QUESTION 072

In procedure EPP-016, Uncontrolled Depressurization of All Steam Generators, the Operator is directed to establish feed flow to all three Steam Generators. What is the setpoint and basis for establishing flow in this range?

A. 80-90 gpm, maintain minimum feed flow to ensure CST inventory is maintained until RHR can be placed in service

B. 100-110 gpm, maintain a minimum of 300 gpm feed flow to ensure adequate heat sink is maintained

C. 80-90 gpm, establish a minimum verifiable flow to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase

D. 100-110 gpm, establish a minimum verifiable flow to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase

QUESTION 073

Given the following conditions:

- Mode 1, 100% RIP
- 'A' CCW Pump and Heat Exchanger are in service
- The crew is isolating Component Cooling Water to the Spent Fuel Pit for Heat Exchanger maintenance
- CCW flow on FI-613 indicates 2200 6PM and trending down
- CCW Pressure on PI-612 indicates 110 psig and trending up slowly
- The RO opens CC-749A, CCW from RHR HX 'A'

Which one of the following describes the function provided by opening CC-749A?

A. Ensures sufficient flow through a CCW pump to satisfy the minimum flow requirement

B. Ensures CCW flow limitations on the Non-Regenerative Heat Exchanger are not exceeded

C. Ensures CCW Heat Exchanger flow will remain below 2350 6PM to minimize damage from tube vibration

D. Reduce CCW system pressure to ensure design pressure of the RHR Heat Exchangers is not exceeded

QUESTION 074

Given the following conditions:

- A rapid load reduction from 100% to 70% power was performed.
- Control Bank D rods were inserted to 180 steps.
- One Control Bank D rod did not move and is currently at 214 steps.

Which one of the following describes a concern associated with the rod misalignment?

A. Xenon buildup in the area of the stuck rod will immediately cause significant core power distribution affects

B. Xenon burnout in the area of the stuck rod will immediately cause significant core power distribution affects

C. Xenon buildup in the area of the inserted rods may affect core power distribution if left uncorrected

D. Xenon burnout in the area of the inserted rods may affect core power distribution if left uncorrected

QUESTION 075

A leak in the Service Water system has occurred.

The Aux Building North Reader has been isolated due to a large leak downstream of the Service Water Booster Pump Noah Reader supply valve, SW-25.

Which one of the following describes the impact on cooling water supplied to the Containment Air Recirculation Fans, HVH-l-4?

A. Service Water Booster Pump 'A' can supply cooling from the South Reader only

B. Service Water Booster Pumps 'A' and 'B' can supply cooling from the South Reader only

C. Service Water Booster Pump 'A' can supply cooling from the North and South Readers

D. Service Water Booster Pumps 'A' and 'B' can supply cooling from the Noah and South Headers

QUESTION 076

The Control Room has been evacuated.

Which one of the following describes the location and conditions required for monitoring SO Pressure?

A. In the AFW Pump Room; readings may be obtained immediately

B. At the Secondary Control Panel; readings may be obtained immediately

C. In the AEW Pump Room; only afier the DS Diesel is operating

D. At the Secondary Control Panel; only after the DS Diesel is operating

QUESTION 077

A reactor trip has occurred

The crew is performing actions contained in EPP-4, Reactor Trip Response

Group Demand Counters on CB 'D' indicate 218 steps.

Which one of the following Rod Position Indications is used to determine that a boration is necessary lAW EPP-4?

A. All Rod Bottom LEDs illuminated with IRPIs 0-5 inches

B. Two Rod Bottom LEDs extinguished with associated IRPI indicators at 50 inches

C. All RTGB IRPI indicators reading less than 2.5 inches

D. One RTGB IRPI indicator reading 50 inches withdrawn

QUESTION 078

Reactor Protection System Logic Channel 1 (Train 'A') is undergoing trip testing.

Which one of the following describes how a spurious reactor trip is prevented during the breaker testing?

A. Reactor Trip Bypass Breaker 'A' is racked in and closed. It will open on a reactor trip signal from Train 'A'

B. Reactor Trip Bypass Breaker 'A' is racked in and closed. It will open on a reactor

trip signal from Train 'B'

C. Reactor Trip Bypass Breaker 'B' is racked in and closed. It will open on a reactor trip signal from Train 'A'

D. Reactor Trip Bypass Breaker 'B' is racked in and closed. It will open on a reactor trip signal from Train 'B'

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 079

A Large Break LOCA has occuned. The crew is attempting to transfer to Cold Leg Recirculation lAW EPP-9, Transfer to Cold Leg Recirculation.

- APP-002-B3, RWST LO-LO LVL is received.
- The RO verifies that RWST level indicates 8%

Which one of the following describes all equipment that has been or will be secured to prevent loss of suction?

A. RHR pumps only

B. RHR and SI pumps only

C. RRR pumps, SI pumps, and CV Spray pumps only

D. RRR pumps, SI pumps, CV Spray pumps, and Charging pumps

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 080

Given the following conditions:

The plant is operating in Mode 1, 100% RTP.

Which one of the following describes the potential effect of placing Instrument Bus 3 on

its alternate power supply, MCC-8?

A. Indication is momentarily lost, AUTO controllers output fails offscale HIGH

B. Indication is momentarily lost, AUTO controllers revert to MANUAL because the transfer is a 'break before make'

C. Indication is not lost, AUTO controllers output fails offscale LOW

D. Indication is not lost, AUTO controllers remain in AUTO because the transfer is a 'make before break'

R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 081

Given the following conditions:

A LOCA has occurred. Due to Safety Injection System failures, the following indications exist:

- RCS pressure indicates 660 psig and stable
- Core Exit T~Cs indicate 7200F and rising
- RVLIS Full Range indication is 41% and lowering
- All RCPs are secured
- SPDS has been reset. The STA is monitoring CSF Status Trees.

Which one of the following describes the condition of the reactor and the action required?

A. Vessel water level is 3.5 feet below the top of the active fuel. Enter FRP-C.2, Response to Degraded Core Cooling

B. Vessel water level is 3~5 feet below the top of the active fuel Enter FRP-C. 1, Response to Inadequate Core Cooling

C. Vessel water level is 3.5 feet above the bottom of the active fuel. Enter FRP-C.2, Response to Degraded Core Cooling

D. Vessel water level is 3.5 feet above the bottom of the active fuel. Enter FRP-C. 1, Response to Inadequate Core Cooling

QUESTION 082

Given the following conditions:

- A Loss of all AC has occurred.
- The crew is performing actions contained in EPP- 1, Loss of All AC Power.
- Power has NOT been restored to any AC bus.

Which one of the following describes the combination of valves that are expected to fail OPEN?

A. CVC-204A and B, Letdown Line Isolations, and HCV-121, Charging Flow Control

B. HVC-121, Charging Flow Control, and CVC-303A, RCP Seal Leakoff Isolation

C. LCV-l 15B, Emergency Makeup to Charging Pump Suction, and FCV-l 13A, Boric Acid to Blender Isolation

D. FCV-l 13A, Boric Acid to Blender Isolation, and CVC-307, Primary Seal Bypass Isolation

__ QUESTION 083

A Reactor Trip and Safety Injection have occurred.

The following alarms were received in the Control Room:

- APP-O04-Al, S~G A HI STM LINE HI AP SFGRD/TRIP
- APP-O04-A5, S~G A LO LVL & STM > FWF TRIP
- APP-006-A2, S~G A STM > FW FLOW
- APP-006-ES, STM LINE LO PRESS

The crew has completed Supplement 0, Steam Generator Isolation.

Which one of the following describes the Main Steam System component(s) controlling

RCS Heat Removal?

A. Condenser Steam Dumps from 'A', 'B', and 'C' SOs

B. 'A', 'B', and 'C' SO PORVs

C. 'B' and 'C' SO Main Steam Safety Valves

D. Condenser Steam Dumps from 'B' and 'C' SO

QUESTION 084

The plant is in Mode 1, 100% RTP.

During recovery from a Loss of Service Water, the crew has entered AOP-014, Component Cooling Water System Malfunction, due to increasing Component Cooling Water temperatures.

- The North Service Water Reader in the Auxiliary Building is isolated.
- The crew has restored Service Water pressure to normal.
- CCW Heat Exchanger outlet temperature is 1090F and increasing slowly.
- SFP temperature is 950F

Which one of the following describes appropriate actions to reduce heat load on the Component Cooling Water System?

A. Throttle OPEN CC-775, CC FROM SFP HX BUTTERFLY, to raise SFP temperature to I 150F to 1200F

B. Secure Normal Letdown and place Excess Letdown in service

C. Verify both CCW Heat Exchangers in service with CCW Heat Exchanger Return valves, SW-739 & SW-740, at POSITION 2

D. Throttle CLOSED CC-775, CC FROM SF') HX BUTTERFLY, to raise SF') temperature to 1 150F to 1200F

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 085

A transient has occurred resulting in the following conditions:

- Reactor Trip and Safety Injection
- RCS Pressure is 1050 psig and decreasing
- RCS temperature is 5450F
- Pressurizer Level is 78% and increasing
- RCPs are tripped

The crew is performing PATH-i when the following plant conditions develop:

- RCS Pressure is 1200 psig and increasing slowly
- RCS temperature is 5450F
- Pressurizer level is 32% and decreasing

Which one of the following describes the likely cause of the changing conditions?

A. The size of the RCS leak has increased

B. A Faulted Steam Generator has boiled dry

C. A Pressurizer Safety Valve or PORV has reseated

D. The Turbine failed to trip and the MSIVs were closed

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 086

One channel of Power Range NIS is removed from service for testing and all procedural requirements are satisfied.

Which one of the following reactor trip coincidences is correct for the PR NIS while this channel is being tested?

A. 2outof3

B. 2outof4

C. loutof3

D. loutof4

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H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 087

Given the following conditions:

- A SBLOCA has occurred
- The crew is performing actions contained in PATH-i
- RCS Subcooling has been lost
- The RO is unable to start any SI pumps
- All CSFSTs are YELLOW or GREEN

Which one of the following describes the required operation of the RCPs and the reason for the action?

A. All RCPs must be tripped to prevent core uncovery and an Inadequate Core Cooling condition due to the mass being pumped out of the RCS break

B. All RCPs must be tripped because the two phase flow is creating an artificially high vessel level indication and core unccovery will eventually occur if RCPs are left running

C Operating RCPs must remain in operation because there is no other source of core cooling

D. One RCP must immediately be stopped to save for future use in the Functional Recovery Procedures

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 088

Given the following conditions:

- Plant is in Mode 5
- RHR 'A' in service providing core cooling with discharge pressure at 140 psig and stable

- The reactor vessel head is on
- RCS level is minus 14 inches and stable

The crew is responding to an unexpected rise in RCS temperature lAW AOP-020, Loss of Residual Heat Removal (Shutdown Cooling)

Which one of the following actions will be required during this event?

A. Stop any running RHR pumps

B. Reduce RRR flow to isoc) GPM

C. Verify at least one Component Cooling Water pump running

D. Throttle open FCV-605, RHR Heat Exchanger Bypass valve, to stabilize RCS temperature

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R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 089

Given the following conditions:

- A Steam Generator Tube Leak exists on 'A' SO
- The crew is performing AOP-035, Steam Generator Tube Leak

While preparing to cool down to Cold Shutdown, 'A' SO remains isolated, and 'B' and 'C' Steam Generators are aligned to the Main Condenser.

Which one of the following describes the reason that 'A' SO is cooled down using the 'Backfill' method instead of using the Main Condenser?

A. Backfill requires no liquid radwaste processing

B. Backfill provides a faster method of cooling down a ruptured SO

C. Backfill conserves feedwater compared to cooldown using Main Condenser

D. Backfill minimizes the spread of contamination and minimizes radiological release

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 090

Given the following conditions:

- FRP-R.2, Steam Generator Overpressure, is in effect
- STA is monitoring CSFSTs
- The CRSS directs the BOP to check the affected SO water level <84%

Which one of the following describes the reason for this level check?

A. Preparation for resetting the Feedwater Isolation signal

B. The overpressure condition could be caused by the density effects on SO water level indication

C. To determine whether FRP-R.3, Response to SO High Level, is the appropriate guideline for the event

D. Ensures adequate SO inventory for pressure reduction by dumping steam through the SO PORV

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 091

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The plant is at 20% RTP

The crew is raising load lAW GP-005, Power Operation.

Which one of the following describes how Tave is maintained equal to Tref in accordance with approved plant procedures?

A. Tave is being maintained equal to Tref using either manual rod withdrawal or RCS boron dilution during the load increase

B. RCS boron concentration is set at its 100% power value prior to the load increase. Tave is maintained equal to Tref using rod withdrawal only

C. Rods are manually withdrawn above the 100% power insertion limit prior to the load increase. Tave is maintained equal to Tref during the load increase using boron dilution only

D. Load is raised with Rod Control automatically maintaining Tave equal to Tref RCS Boron concentration is adjusted as necessary to ensure rods stay within the Insertion Limits

R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 092

Which one of the following explains the reason for closing the seal return valve after securing a Reactor Coolant Pump with a high #1 Seal Leakoff flow?

A. Establish a boundary at the #2 seal

B. Prevent overflowing the RCP standpipe

C. Minimize heat load on seal return heat exchanger

D. Prevent flow damage to the Thermal Barrier Heat Exchanger

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 093

Given the following conditions:

- The plant is in Mode 1, 100% RTP
- A release of Waste Condensate Tank (WCT) 'A' is in progress
- Annunciator APP-036, RAD MONITOR TROUBLE, is received
- The BOP Operator reports the FAIL light for R-18, Liquid Waste Disposal Monitor, is ON

Which one of the following describes the status of the Liquid Waste Release Isolation, RCV-018?

A. RCV-018 will not automatically close. The release must be stopped manually

B. RCV-O18 will automatically close when the monitor FAIL light is illuminated

C. RCV-Ol8 is not immediately affected and wi]l close if high radiation is sensed by R-18

D Automatic operation of RCV-O 18 is defeated, but the release may continue unless an actual High Radiation condition exists

QUESTION 094

Given the following plant conditions:

A LOCA has occurred
The crew is performing actions of PATH -1
SPDS is reset and the STA is monitoring CSFSTs
CSFSTs indicate the following:

Subcriticality GREEN
Core Cooling YELLOW
Heat SinkYELLOW
IntegrityGREEN
Containment ORANGE
InventoryYELLOW

Which one of the following actions will be taken?

A. Continue with PATH-i.

B. Enter FRP-C.3, Response to Saturated Core Cooling

C. Enter FRP-H.2, Response to Steam Generator Overpressure

D. Enter FRP-J. 1, Response to High Containment Pressure

QUESTION 095

Which one of the following correctly describes the applicability of EPP foldouts?

Each foldout is applicable...

A. only during implementation of the associated EPP.

B. during implementation of the associated EPP and YELLOW path FRPs.

C. during implementation of the associated EPP, YELLOW and ORANGE path

FRPs.

D. during implementation of the associated EPP and YELLOW, ORANGE, and RED FRPs until directed to refer to a different foldout or discontinue use.

QUESTION 096

In accordance with OP-Olo, Refueling, which one of the following describes the MINIMUM requirement for moving fuel between the Refueling Cavity and SFP?

A. A Fuel Handling licensed operator must be present on the refueling floor. A licensed SRO must be present in the SFP.

B. A licensed SRO must be present on the refueling floor. A Fuel Handling licensed operator must be present in the SFP.

C. A licensed SRO must be present on the refueling floor. An STA or Reactor Engineering must be present at the SFP.

D. Reactor Engineering must be present on the refueling floor. A Fuel Handling licensed operator must be present in the SFP.

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QUESTION 097

Given the following conditions:

- Unit 2 is in Hot Shutdown
- All electrical busses in normal alignment
- The key operated inhibit switch for Zone 24 (Electrical Penetration Area) on Fire Detection and Alarrn Panel A2 (FDAP-A2) is placed in the INHIBIT mode

Which one of the following describes the fire detection and actuation capabilities of Zone 24 while it is in the INHIBIT mode?

A. Fire detection is still functional
Automatic actuation is disabled
Local Manual actuation is still functional

B. Fire detection is disabled
Automatic actuation is disabled
Local Manual actuation is disabled

C. Fire detection is disabled
Automatic actuation is disabled
Local Manual actuation is still functional

D. Fire detection is still functional
Automatic actuation is still functional
Local Manual actuation is still functional

¾

H.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 098

Which one of the following provides the location and function of the 'CHARGER N SERVICE' switch in the 'A' 125 VDC electrical system?

It is located on battery charger:

A. 'A' and places the selected battery charger in service

B. 'A-i' and places the selected battery charger in service

C. 'A' and places the selected battery charger alarms in service

D. 'A-i' and places the selected battery charger alarms in service

H~B. Robinson
Site Specific NRC Written Exarnination
Reactor Operator

QUESTION 099

Which one of the following describes the control power supply for Reactor Trip Breaker 'B' and Reactor Trip Bypass Breaker 'B'?

	Reactor Tn:, Breaker 'B'	Reactor Trip Bypass Breaker 'B'
A.	'A'125 VDC Dist. Panel	'A'125 VDC Dist. Panel
B.	'A'125 VDC Dist. Panel	'B'125 VDC Dist. Panel
C.	'B'125 VDC Dist. Panel	'A'125 VDC Dist. Panel
D.	'B'125 VDC Dist. Panel	'B'125 VDC Dist. Panel

R.B. Robinson
Site Specific NRC Written Examination
Reactor Operator

QUESTION 100

Which one of the following actions will occur if a Control Room Ventilation Isolation is initiated by a High Radiation signal on Control Room Area Monitor, R-1?

A. Exhaust fan RVE-16 staiiits

B. Recirculation fan HVE-19A staits

C. Ventilation intake damper opens

D. Filter Bypass damper opens

3•3 INSTRUMENTATION

3.3.7 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation

LCO 3.3.7 The CREFS actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1. 2. 3. 4
During movement of irradiated fuel assemblies.
During CORE ALTERATIONS.

ACTIONS

NOTE
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One automatic --actuation train inoperable.	A.1 Place one CREFS train in emergency pressurization mode.	7 days
B. Two automatic actuation trains inoperable. OR One radiation monitoring channel inoperable.	B.1 Place one CREFS train in emergency pressurization mode.	Immediately

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time for Condition A or B not met in MODE 1,2.3. or4.	C.1 Be in MODE 3. AND C.2 Be in MODES.	6 hours 36 hours
D. Required Action and associated Completion Time for Condition A or B not met during	0.1 Suspend CORE ALTERATIONS.	Immediately

movement of irradiated
fuel assemblies or 0.2 Suspend movement ofImmediately
during CORE irradiated fuel
ALTERATIONS. assemblies.

SURVEILLANCE REQUIREMENTS

NOTE

Refer to Table 3.3.7-1 to determine which SRs apply for each CREFS Actuation Function.

	SURVEILLANCE	FREQUENCY
SR 3.3.7.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.7.2	Perform COT.	92 days
SR 3.3.7.3	Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR3.3.7.4	Perform MASTER RELAY TEST.	18months
SR 3.3.7.5	Perform SLAVE RELAY TEST.	18 months
SR 3.3.7.6	Perform CHANNEL CALIBRATION.	18 months

Table 3,3.7~1 (page 1 of 1)
CREFS Actuation Instrumentation

FUNCTION	REQUIRED CHANNEB	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Automatic Actuation Logic and Actuation Relays	2 trains	SR 3.3.7.3 SR3.3.7.4 SR3.3.7.5	NA
2. Control Room Radiation Monitor	1	SR 3.3.7.1 SR3.3.7.2 SR3.3.7.6	25 "IR/hr
3. Safety Injection	Refer to LCO 3.3.2. "ESFAS Instrumentation." Function 1, for all initiation functions and requirements.		

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 001

Number:

Question:You are assigned as a spare RO on day shift. You were unable to attend the pre-shift brief. The on-shift RO has an emergency requiring him to leave the site immediately. You have been directed to replace him for the remainder of the shift.
JAW OMM-001-12, Minimum Equipment List and Shift Relief, which one of the following is required for the shift relief?

A. Perform a shift relief lAW Anachment 10.18, Middle of the Shift Turnover.

B. Perform a full shift relief lAW Attachment 10.11, RO/BOP turnover checklist.

C. Read and initial Attachment 10.7, Shift Reeap~Shift Briefing Form, then relieve the watch.
D. Verbal turnover with CRSS approval. Read and sign Shift Recap/Shift Brief Attachment 10.7 after relieving the watch.

Answer: A. Perform a shift relief JAW Attachment 10.18, Middle of the Shift Turnover.

Justification: A- Correct. Middle of the shift turnover may be performed when an emergency or sickness arises.

B- Incorrect because it represents the normal shift turnover procedure.
C- May be performed for a relief where an individual is just stepping away temporarily, such as for a FFD test.
D- Incorrect, but contains a partially correct description of C (CRSS approval)

Tier/Group 3

IOCFR5S.41
41
IOCFR55.43

B/N/M New

K/A #: 2.1.2 Knowledge of operator responsibilities during all modes of plant operation

K/A Values: 3.0

Cog Level: Memory

References: OMM-001-12, section 8.10.8
LP OMM-00I-12, Objective 3

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 002

Question: FRP-P.1, Response to Imminent Pressurized Thermal Shock, is entered from Critical Safety Function CSF-4, RCS Integrity, in response to which one of the following...

A. RED condition only

B. ORANGE condition only

C. RED or ORANGE condition

D. YELLOW or ORANGE condition

Answer: C. RED or ORANGE condition

Justification: A- Incorrect. Only represents half of the conditions that would require entry.

B- Incorrect. Only represents half of the conditions that would require entry
C- Correct.
D- Incorrect because FRP-P.2 would be entered on a yellow path

TieriGroup 1/1

IOCFR5S.41
4'
1OCFR5S.43

BINIM New

K/A #: E08 2.4.1 Knowledge of EOP entry conditions and immediate action steps

K/A Values: 4.3

Cog Level: Memory

References: FRP-P.1, entry conditions, page 3 of 22
LP FRP-P.1, Objective 2
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 003

Number:
Question:Following a Reactor Trip and Safety Injection the STA reports that the SPDS is out of service. Critical Safety Function status information is provided manually and indicates as follows:

Subcriticality GREEN
Core Cooling YELLOW
Heat Sink YELLOW
Integrity GREEN
Containment GREEN
Inventory YELLOW

Which one of the following is the required monitoring frequency of CSFSTs in this condition?

A Continuously

B. Once every 10-20 minutes

C. Once every 30-40 minutes

D. Not required unless a significant change in plant status occurs

Answer: B. Once every 10-20 minutes

Justification: A- meorrect. If no condition higher than yellow is encountered, monitoring may be performed every 10-20 minutes.

B- Correct.
C- Incorrect. Not frequent enough
D- Always required, but if monitoring every 10-20 minutes and a significant change in status occurs, then monitoring must then be conrtinuous

Tier/Group 3

IOCFR55AI 41
1OCFR55.43
8/NIM Modified from Robinson Bank question used on 2/7/96
K/A #: 2.4.13 Knowledge of roles and responsibilities during EOP use
K/A Values: 3.3
Cog Level: Comprehension

References: OMM-22, section 8.2.6, page 19 of 50
LP OMM-22 R4, Objective 3
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 004

Number:

Question: Given the following plant conditions:

- Reactor power is at 100%
- Off-Site power is lost causing a reactor trip
- The Emergency Diesel Generators fail to start
- The Turbine Stop valves are not closed

Which one of the following describes an action that should be taken in this situation in accordance with EPP-00l, 'Loss of All AC Power'?

A. Emergency Borate using MOV-350

B. Close the MSIVs and bypasses

C. Manually run the turbine back with the limiter

D. Manually run the turbine back with the governor valve DECREASE button

Answer: B. Close the MSIVs and bypasses

Justification: A- rncorrect. Action to attempt turbine trip at step 2 ofEPP-001 is to close MSIVs and bypass valves

B- Correct.
C- Incorrect. Alternate means of tripping the turbine are not provided for EPP-00l
D- Incorrect. Alternate means of tripping the turbine are not provided for EPP-001

Tier/Group 3

IOCFRSS.41
41
IOCFR5S.43
B/N/M New

K/A #: 2.4.49 Ability to perform without reference to procedures those actions that require immediate operation of system components and controls

K/A Values: 4.0

Cog Level: Memory

References: EPP-1, Step 2 RNO
LP EPP-1, Objective 5
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 005

Question: The crew has completed OST-OSI, Reactor Coolant System Leakage Evaluation, (Every 72 hours during steady state operation, and within 12 hours after reaching steady state operation)

The following results are obtained:

- Identified leakage to PRT 2.7 6PM
- Unidentified leakage 0.8 6PM

The E&C Technician was directed to perform CP-0l4 to determine primary to secondary leakage and reports the following results:

- A SO 0.08 6PM
- B 56 0.56 6PM
- C 56 0.09 6PM

Which, if any, of the following Technical Specification RCS leak rate limits is being exceeded?

A. None

B. Identified

C. Unidentified

D. Primary to secondary

Answer: D. Primary to secondary

Justification: A- Incorrect. B 56 has a leak rate of .56 6PM, which is higher than 500 gallons per day (864).

B- Incorrect. The total leakage through SOs and to the PRT is within the 100PM limit for Identified
C- Incorrect. 0.8 6PM is within limits for unidentified.

D- Correct
Tier/Group 3

IOCFR55.41
41
10CPR55.43
B/N/M New
K/A #: 2.1.33 Ability to recognize TS entry for a system
K/A Values: 3.4
Cog Level: Comprehension
References: TS 3.4.13
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
OST-05] and attachments
LP TS-3, Objective 2
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 006

Question: You have been assigned to perform a procedure designated 'Multiple Use' lAW PRO-NOOC-0200.

Which one of the following identifies the use of this designation?

A. One section of the procedure may be 'Continuous use' while another section may be designated 'Reference use'

B. One section may require dual verification of procedure steps while another section requires only one signoff per step

C. The performance of anyone 'Continuous use' procedure section may require action in multiple locations

D. More than one individual will be required to complete the performance of the procedure

Answer: A. One section of the procedure maybe 'Continuous use' while another section maybe designated 'Reference use

Justification: A- Correct. A multiple use procedure is identified as containing more than one level of use.

B- Incorrect. The distractors are used to convey other uses of the word 'multiple', as in multiple signatures, locations, or personnel performance.
C- Incorrect. The distractors are used to convey other uses of the word 'multiple', as in multiple signatures, locations, or personnel performance.
D- Incorrect. The distractors are used to convey other uses of the word 'multiple', as in multiple signatures, locations, or personnel performance.
Tier/Group 3
IOCFR55.41
41
IOCFR55.43
B/N/NI Modified from Robinson Bank
IQA #: 2.1.21 Ability to obtain and verify controlled procedure copy
IC/A Values: 3.1
Cog Level: Memory

References: PRO-NGGC-0200 section 9.2.7, page 13 of 18
LP NGGC-0200, Objective 2
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 007

Number:

Question: Given the following conditions:

- Mode I at 100% when a LBLOCA occurred
- A General Emergency has been in effect for 6 hours

Which one of the following is the ThDE limit for performing Life-Saving actions?

A. 5Rem

B. 25Rem

C. 75Rem

D. 25ORem

Answer: B. 25 Rem

Justification: A- Incorrect. Annual TEDE limit
B- Correct. Lifesaving action 25 Rem
C- Incorrect.
D- Incorrect.

Tier/Group 3

1OCFR55.41
41
I OCFR55.43

BINIM Bank

K/A #: 2.3.4 Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized

K/A Values: 2.5

Cog Level: Memory

References: EPTSC-04, Step S.4.3.16.b, page 4-9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 008

Question: You have been directed to perform a Surveillance Test (OST) that is part of a Post Maintenance Test (PMT).

Which one of the following describes a condition where a step in the OST may be marked 'N/A'?

A. To change the conditions or intent of the test

B. A precaution or limitation of a test is not applicable

C. To designate components that are not being used as part of the PMT

D. To identity required components that are Out of Service during the performance of a test

Answer: C. To designate components that are not being used as part of the PMT

Justification: A- Incorrect. Using N/A to change conditions or ignore precautions is forbidden.
B- Incorrect. Using N/A to change conditions or ignore precautions is forbidden.
C- Correct. N/A should be used when performing partial OSTs to designate components that will not be used in the OST

D- Incorrect. If required equipment is 005, the 005 should be marked next to the step as well as action taken in the OST 'comments' section

Tier/Group 3

lOCFRSS.41

41

I OCFR55.43

B/N/M New

K/A #: 2.2.12 Knowledge of surveillance procedures

K/A Values: 3.0

Cog Level: Memory

References: OMM-015, Section 8.2

LP OMM-l5, Objective 2

R.B. Robinson

Site Specific Wrinen NRC Examination

Reactor Operator

Final Worksheet

Question RO 009

Number:

Question: Given the following conditions:

- A manual reactor trip is performed by the RO
- Reactor trip breaker A indicates open
- Reactor trip breaker B indicates closed
- Reactor power indicates 3% and decreasing

which one of the following describes the condition of the reactor and the appropriate action?

A. The reactor is tripped. Continue in Path-I

B. The reactor is tripped. Emergency Boration is required per EPP-4, Reactor Trip Response

C. The reactor is not tripped. Transition to FR-S.I, Response to Nuclear Power Generation/ATWS

D. The reactor is not tripped. Reattempt to manually trip the reactor and initiate turbine trip

Answer: A. The reactor is tripped. Continue in Path-i

Justification: A- Correct. Path-I basis document indicates trip is verified by at least I trip breaker open and power less than 5%.

B- Incorrect. No indication of a stuck rod. If the crew did decide to borate in EPP-4, Emergency boration is last on the list of methods.

C- Incorrect. Conditions not met for FRP-S.I

D- Incorrect. Conditions not met for PATH-I step I RNO

Tier/Group 1/2

1OCFRSS.41

41

I OCFRSS.43

B/N/M New

K/A #: 007EA206 Determine or interpret the occurrence of a reactor trip

K/A Values: 4.3

Cog Level: Comprehension

References: Path-i basis document

LP Path-I, Objective 3

H.B. Robinson

Site Specific Written NRC Examination

Reactor Operator

Final Worksheet

Question RO 010

Number:

Question: Due to a SBLOCA with numerous Safety Injection failures, the crew has entered FRF-C.2, Response to Degraded Core Cooling, based upon an ORANGE condition on the Core Cooling

CSF Status Tree.

Which of the following Critical Safety Functions may exhibit a RED condition based solely upon the actions perforr-ned in FRP-C.2?

A. Subcriticality

B. Core Cooling

C. HeatSink

D. Integrity

Answer: D. Integrity

Justification: A- Incorrect. Will not expect a return to power
B- Incorrect. Action in an ORANGE path should not bring the plant to a RED condition on the same CSF
C- Incorrect. There is a possibility that if FRP-C is Orange then FRP-H is already red
D- Correct. FRP-C.2, step 20 caution describes RED condition on Integrity may develop due to rapid depressurization of SGs and SI accumulator injection.

Tier/Group1/1

IOCFRS5.41
41
I OCFRSS.43

IB/NIM New

K'A #: EO6EKI .2 Knowledge of operational implications of the following concepts as they apply to degraded core cooling: Normal, abnormal, and emergency procedures associated with degraded core cooling

K/A Values: 3.5

Cog Level: Comprehension

References: FRP-C.2, step 20
LP FRP-C.2, Objective 3
H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 011

Question: The plant is operating at 100% power when a Loss of Off-Site power causes a reactor trip. Ten minutes after the trip, the following conditions exist:

- SO A Pressure 1040 psig and stable
- SO B Pressure 1035 psig and stable
- SO C Pressure 1040 psig and stable

- All RCPs are Off
- RCS Pressure is 2200 psig and stable
- Thot is approximately 5780F in all 3 loops and stable
- Core Exit TCs indicate approximately 5800F
- Tcold is approximately 5670F in all 3 loops and stable

Based on the above indications, what is the condition of the RCS?

A. Natural Circulation exists. The condenser steam dumps are maintaining heat removal

B. Natural Circulation does not exist. Heat removal may be established by opening the condenser steam dumps

C. Natural Circulation exists. SO PORVs are maintaining heat removal

D. Natural Circulation does not exist. Heat removal may be established by opening the

SO PORVs

Answer: D. Natural Circulation does not exist. Heat removal may be established by opening the SO PORVs

Justification: A- Incorrect. On a loss of off site power, condenser steam dumps are unavailable due to loss ofcirculating water pumps.
B- Incorrect. On a loss of off site power, condenser steam dumps are unavailable due to loss of circulating water pumps.
C- Incorrect. No Natural Circ based on steam table indications, with Tcold approximately 15 degrees higher than saturation pressure of all 3 SOs, although Thot is lowering slowly.
D- Correct. Teold should be lowered by approximately 15 degrees. SO pressures are at or near the SO PORV set pressure, but the stem does not indicate if they are performing their function. The only way to tell if Natural Circulation exists is by trending Tcold.

Tier/Group 1/1
IOCFR55.41
41
IOCFR55.43

B/N/M Modified for Robinson parameters REFERENCE REQUIRED FOR ANSWER. Steam Tables

R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

K/A #: EO9EKI.2 Facility heat removal operations

K/A Values: 3.6

Cog Level: Synthesis

References: FOP PATH-i on RCS temp> 547 to dump steam
Steam tables
EPP Supplement F, Natural Circulation verification

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H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 012

Question: During an ATWS event from 100% power End of Life (EOL) conditions, which one of the following will provide the most negative reactivity insertion within the first minute?

A. RCS boration
B. Manual rod insertion

C. Manual Turbine Trip

D. Isolating a Faulted Steam Generator

Answer: C

Justification: A- Incorrect. Boration is a physical act that will take some time to take effect.

B- Incorrect. Manual rod insertion is a physical act that will take some time to take effect

C- Correct. A large heatup (load reject) will cause FTC to add negative reactivity instantaneously, (as soon as the fuel is heated) whereas MTC will add negative reactivity as the water surrounding the fuel is heated, taking a little more time.

D- Incorrect. Isolating a faulted SO will stop a positive reactivity insertion, but not necessarily add negative immediately.

Tier/Group RO 1-2

1OCFRSS.41 41

10CFR55.43

Bank/Newi Modified Salem 2001 editorial Mod

K/A #: 029EK1 .05 Ops implications of negative FTC/MTC as applied to large PWRs

K/A Values: RO 2.8

Cognitive Level: Comprehension

References: FRP-S.1 step 2

LP FRP-S.1, Objective 3 Q&ot a direct explanation of question)

Reactor Theory, Chapter 4, Reactivity Coefficients

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 013

Question: The crew is performing a plant startup lAW GP-0003, Normal Plant Startup from Hot Shutdown to Critical.

- Tavg is 5400 F.
- Reactor Trip Breakers are OPEN
- The STEAM DUMP T-AVG CONTROL BLOCKED status light is illuminated

You have been directed to place Condenser Steam Dumps in service.

PC-464B, STEAM HEADER PRESS, is correctly adjusted to maintain RCS temperature.

which one ofthe following contains the ONLY action(s) required to allow RCS temperature to stabilize at current plant conditions using condenser steam dumps?

A. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS

B. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS, then place STEAM DUMP CONTROL switch to ON

C. Momentarily place STEAM DUMP CONTROL switch to BYPASS T-AVG INTLK, then place switch to OFF.

D. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS, then momentarily place STEAM DUMP CONTROL switch to BYPASS T-AVG INTLK

Answer: D. Place STEAM DUMP MODE SELECTOR SWITCH in STEAM PRESS, then momentarily place STEAM DUMP CONThOL switch to BYPASS T-AVG INTLK

Justification: A- Incorrect. With the low Tavg interlock actuated, the steam dump control switch must be placed in bypass to clear the signal.

B- Incorrect. With the low Tavg interlock actuated, the steam dump control switch must be placed in bypass to clear the signal.
C- Incorrect. The steam dump will not operate if steam dumps are not in pressure control mode.
D- Correct per GP-0002, section 8.5.32, page 86 of Ill. (Condenser steam dump control was chosen for this question because it will affect reactivity and the topic was not selected as a system test item)

Tier/Group3

IOCFRS5.41
41
IOCFRS5.43

B/N/M New

K/A #: 2.2.1 Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.

K/A Values: 3.7

Cog Level: Comprehension

References: GP-0002, step 8.5.32
LP GP-0002, Objective 8
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 014

Question: The crew is performing a Natural Circulation Cooldown lAW BPP-5, Natural Circulation Cooldown.

Which one of the following describes a potential consequence of exceeding the cooldown rate limit of2S0F per hour?

A. Loss of Heat Sink due to excessive steaming rate

B. Pressurized Thermal Shock due to uncontrolled cooldown

C. Uncontrolled pressurizer level increase caused by RCS void formation

D. Uncontrolled pressurizer level decrease caused by RCS void formation

Answer: C. Uncontrolled pressurizer level increase caused by RCS void formation

Justification: A- Incorrect. Heat sink will be maintained by AEW.
B- Incorrect. PTS would not occur unless there was another mechanism for a large rapid cooldown rate, such as a LOCA.
C- Correct. During a natural circulation cooldown, the head will stay holler than the rest of the RCS. As the RCS is cooled and pressure goes down, the head will become closer to saturation. If cooldown rate exceeds the RCS ability to remove heat from the bead area, a void could form, causing a rapid rise in pressurizer level.
D- Incorrect. Pressurizer level would increase with a void in the head

Tier/Group 1/I

IOCFR5S.41
41
I OCFRS5.43

B/N'M New

K/A #: EO9EA1 .2 Ability to operate and/or monitor the following as they apply to Natural Circulation Operations: Operating behavior characteristics of the facility
'CIA Values: 3.6

Cog Level: Comprehension

References: EPP-5, Natural Circulation Cooldown, step 14 and basis
LP-EPP-5, Objective 3
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 015

Number:

Question: Given the following conditions:

- RNP is in Cold Shutdown for refueling
- Core reload from the SFP to containment is in progress
- A fuel assembly has just been placed in the SFP upender to send to containment

Which one of the following is a interlock that must be met in order to send the Conveyor Car to containment?

A. Conveyor Car control must be transferred to the SFP

B. The SFP bridge must be positioned out of the SF? Transfer Canal area

C. Both the CV and the SFP upenders must be in the horizontal (down) position

D. The CV manipulator crane must be positioned out of the CV transfer canal area

Answer: C. Both the CV and the SF? upenders must be in the horizontal (down) position

Justification: A- Incorrect. SEP does not need control to transfer the conveyor, but the SFP console provides a switch for control at the Reactor Side
B- There is no conveyor interlock associated with crane locations
C- Correct because the conveyor will not move with either upender in the vertical position. Additionally, the transfer tube must be open.
D- There is no conveyor interlock associated with crane locations

Tier/Group 3

IOCFR5S.41

41
I OCFRSS.43
BINIM Bank
K/A #: 2.2.27 Knowledge of the refueling process
K/A Values: 2.6
Cog Level: Memory

References: FH System description pages 26-27
LP FHS Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question R0016

Number:

Question: Given the following conditions:

- Modelatl00%RTP
- You have been directed to enter containment to perform a task.
- Your RWP states that your EPD dose alarm will be set at 80 mrem and your rate alarm will be set at 160 mrem/hr
- When you log in to the Automated Access Control System, the computer screen warns you that RIMS is not operational.

Which one of the following describes the settings for your EPD dose and rate alarms and what is the appropriate response to a dose alarm while you are performing a task?

A. Dose - 50 mrem; Rate - 100 mrem/hf. Stop work, exit the area, notify Health Physics

B. Dose - 25 mrem; Rate - 50 mrem/hr. Stop work, exit the area, notify Health Physics

C. Dose - 80 mrem; Rate - 160 mrem/hr. Stop work, exit the area, notify Health Physics

D. Dose - 40 airem; Rate - 80 rnrem/hr. Stop work, exit the area, notify Health Physics

Answer: A. Dose - 50 mrem; Rate - 100 mrem/hr. Stop work, exit the area, notify Health Physics

Justification: A- Correct. With RIMS out of service, default settings are 50mr and 100 mr/hr.

B- Incorrect. Anytime the dosimeter alarms you should leave the area.
C- Incorrect. Wrong dosimeter settings
D- Incorrect. Wrong dosimeter settings
Tier/Group 3

I OCFR55.4 I
41
I OCFR55.43
B/N/M Bank (Editorial Mods)
K/A #: 2.3.2 Knowledge of facility ALARA program
K/A Values: 2.5
Cog Level: Memory
References: PLP-0 16
Rad Fundamentals (I did not have a copy)
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 017
Number:

Question: Which one of the following describes the correct sequence for initiating a Containment Purge for Refueling Operations?

A. Place the Purge or Refuel valves control switch in the REFUEL position, place a CV Purge fan control switch in START, verify purge supply and exhaust valves and

containment intake damper open, verify fan starts.

B. Place a CV Purge fan control switch in START, verify containment intake damper opens, verify fan starts, verify purge supply and exhaust valves open. Place the Purge or Refuel valves control switch in the REFUEL position.

C. Place the Purge or Refuel valves control switch in the REFUEL position, place a CV Purge fan control switch in START, verify fan starts, verify purge supply and exhaust valves and containment intake damper open.

D. Place a CV Purge fan control switch in START, verify fan starts, verify containment intake damper and purge supply and exhaust valves open. Place the Purge or Refuel valves control switch in the REFUEL position.

Answer: A. Place the Purge or Refuel valves control switch in the REFUEL position, place a CV Purge fan control switch in START, verify purge supply and exhaust valves and containment intake damper open, verify fan starts.

Justification: A- Correct. Valve control placed in REFUEL, start fan. Valves and dampers open prior to fan start.

B- Incorrect. Fan is not started first
C- Incorrect. The fan will not start until valves and dampers realign
D- Incorrect. Place switch in REFUEL prior to starting fan

Tier/Group 3

IOCFR55.41
41
IOCFR5S.43

ES/NIM New

K/A #: 2.3.9 Knowledge of the process for performing a containment purge.

K/A Values: 2.5

Cog Level: Memory

References: OP-921, section 8.4.2, page 33-36 of 47
LP CVIIVAC, Objective S
n.H. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 018

Number:

Question: Given the following conditions:

- The operators are responding to a LOCA lAW PATH-I last column
- FOLDOUT "B" is in effect
- Containment pressure is S psig and slowly decreasing
- RCS pressure is 100 psig
- Supplement "D" Components are capable of recirculation
- Auxiliary Building radiation levels are normal
- REIR flow is>3000 gpm
- RWST level is 28% and decreasing

Which one of the following transitions will be made?

A. EPP-008, Post LOCA Cooldown and Depressurization

B. EPP-009, Transfer to Cold Leg Recirculation

C. EPP-01S, Loss of Emergency Coolant Recirculation

D. EPP-020, LOCA Outside Containment

Answer: B. EPP-009, Transfer to Cold Leg Recirculation

Justification: A- Incorrect. RHR flow greater than 3000 gpm
B- Correct.
C- Incorrect. Supplement "D" components are capable of Cold Leg Recirculation.
D- Incorrect. Based on plant conditions, LOCA is not outside CV.
Tier/Group 1/2

1OCFRS5.41
41
1 OCFRS5.43

B/N/M Modified (Robinson Bank)

K/A #: Ol 1EK3.15 Knowledge of the reasons for criteria for shifting to cold leg recire

K/A Values: 4.3

Cog Level: Comprehension

References: PATTI-I last column
LP Path I Objective 7, EPP-9 Objective 2
n.H. Robinson
Site Specific Wriffen NRC Bxarnination
Reactor Operator
Final Worksheet

Question RO 019

Number:

Question: The crew is performing actions of EPP-20, LOCA Outside Containment.
All actions have been performed, and attempts to isolate the leak have been unsuccessful.

Which one of the following procedures will provide the actions that will mitigate this event?

A. PATH-I Diagnostics

B. EPP-7, ST Termination

C. EPP-8, Post LOCA Cooldown and Depressurization

D. EPP-15, Loss of Emergency Coolant Recirculation

Answer: D. EPP-15, Loss of Emergency Coolant Recirculation

Sustification: A- Incorrect. Path I diagnostics would only lead back to EPP-20.
B- Incorrect. EPP-7 will be detrimental to isolating the break because core cooling would be reduced.
C- meorrect. EPP-8 only applies to LOCA inside containment.
D- Correct. EPP-15 will apply because if the break is not isolated, the RWST will eventually empty with no containment sump inventory available to maintain core cooling. EPP-l5 provides steps to initiate makeup
Tier/Group 1/2
IOCFRSS.41
41
IOCFRS5.43

BINIM New

K/A #: EO4EA2.1 Ability to determine or interpret facility conditions and selection of procedures during abnormal and emergency operations

K/A Values: 3.4

Cog Level: Comprehension

References: EPP-20, step 7 RNO
LP EPP-20, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator

Final Worksheet

Question Number: RO 020

Question.'

Given the following plant conditions:

- A tornado has touched down inside the protected area
- A series of transients as a result of the strike caused a LBLOCA
- The SUT was destroyed by a tornadic missile
- Containment pressure is 23 psig

Which one of the following describes the operation of the "B" Component Cooling Water pump?

The pump will

A. not automatically start and cannot be manually started

B. not automatically start, but can be manually started

C. only start if a low CCW system pressure condition is sensed

D. automatically start on the blackout sequencer

Answer: A not automatically start and cannot be manually started

Justification: A- Correct
B- Incorrect- will not auto-start. Cannot bestarted due to a continuous trip signal - "A" CCW pump can be manually started if power is available on the DS Bus
C- Incorrect- Auto start on low pressure is blocked by SBO signal
D- Incorrect- Normal operation. Start is blocked if a spray actuation signal is present

Tier/Group 2/3

IOCFRS5.41
41
I OCFR55.43

B/N/M Bank

K/A #: 008K2.02 Knowledge of bus power supplies to CCW pumps including Emergency backup

K/A Values: 3.0

Cog Level: Comprehension

References: SD-013, CCW, page 18 & CCW Logic
LP CCW Objective 14
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 021

Question:Given the following plant conditions:

- Mode I at 100% RTP
- Breaker 52/17, SUT 4KV Bus 3 Supply, trips on a fault

Which one of the following describes the expected response of the Service Water System?

Both Service Water Booster Pumps and
A.Only Service Water Pump "C" will be automatically started
B.Service Water Pumps "C"and "r)" wilt be automatically started
C.Service Water Pump "A" and "B" will be automatically started
D.Only Service Water Pump "A" will be automatically started

Answer: B. Service Water Pumps "C"and "D" will be automatically started

Justification: A- Incorrect - Recent modification. Before mod, only one SW pump (A or C) was started on SnO sequencer
B- Correct
C- Incorrect pair of pumps
D- Incorrect - Recent modification. Before mod, only one SW pump (A or C) was staretd on SBO sequencer. Incorrect pump association. Powered from B-I. Lose E-2
Tier/Group2/2

IOCFRSS.41
4'
I OCFR55.43

B/N/M Bank

K/A #: 075K203 Bus power supplies to Essential Service Water Pumps

K/A Values: 2.6

Cog Level: Comprehension

References: Logic, Safeguard Sequence,
SWS LP, Objective 14

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Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 022

Question: Given the following conditions:

- A Reactor Shutdown is in progress
- APP-005-B2, N-35 LOSS OF COMP VOLT, is received
- Intermediate Range Channel N-35 indicates 6 X 10.10 amps
- Intermediate Range Channel N-36 indicates 1 X 10.11 amps
- Source Range Channel N-5 1 indicates 80 CPS
- Source Range Channel N-52 indicates 90 CPS

Which one of the following correctly describes the action required to obtain Source Range indication?

A. Remove the Instrument Power fuses from N-36

B. Remove the control power fuses from N-36

C. Push both 'Source Range Logic Trip Defeat' buttons

D. Push both 'Permissive P-6 Defeat' buttons

Answer: D. Push both 'Permissive P-6 Defeat' buttons

Justification: A- Incorrect. Removing any power from N-36 will not cause N-35 to indicate low enough to remove the P-i signal

B- Incorrect. Removing any power from N-36 will not cause N-35 to indicate low enough to remove the P-6 signal
C- Incorrect. The SR Logic Trip defeat buffons are used for SR High flux trip.
D- Correct. Ifcompensating voltage is lost, the detector will indicate high. Ifthe detector indicates high, P-i will be locked in unless it is defeated.

Tier/Group 1/2

IOCFR5S.41
41

IOCFR5S.43

fi/NIM Bank

K/A #: 033AK101 Operational implications of voltage changes on NI performance

K/A Values: 2.7

Cog Level: Analysis

References: SDOIO, NI system Page 14 and 23
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Attachment 10.1, Figure 2
LP NIS, Objective 9
Logic Diagram sheet 4
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 023

Question: During operation at power steam generator tube leakage is detected and estimated at 200 gpm by the reactor operator. The following plant indications existed at that time:

- RCS pressure 2150 psig and lowering
- Reactor Power - 80%
- SQ Pressures - 950 psig
- PZR Level - 42% and lowering

The unit is tripped and plant parameters following the trip are:

- RCS pressure - 1625 psig and lowering
- Reactor Power - 0%
- SO Pressures - 1025 psig
- PZR Level - 13% and lowering

Based on the two sets of given data, which one of the following describes the approximate primary to secondary leakage following the trip

A. lOOgpm

B. 2OOgpm

C. l4Ogpm

D. 67gpm

Answer: C. 140 gpm

Justification: A- Incorrect. Half the OP misconception on half the flow rate
B- Incorrect. Misconception on leak rate calculation
C- Correct. Leakage is approximately proportional to the square root of the Delta P across the break. If DP is 1200 psid prior to the reactor trip and 600 psid after the trip, then half of the OP should result in approximately 70% of the flow rate.
D- Incorrect. Approximately inverse on correct answer

Tier!Oroup 1/2

IOCFRSS.41
41
IOCFRS5.43

B/N/NI Modified from 1P2 audit exam 2001

K/A #: O3SEK1.02 Operational implications of leak rate versus pressure drop

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
-K/A Values: 3.2

Cog Level: Analysis

References: Thermodynamics, chapter 6
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 024

Number:

Question: Given the following conditions:

- The plant is in Cold Shutdown
- RHR 'B' pump running aligned for Shutdown Cooling
- RCS temperature is I 850F
- RCS pressure is 365 psig
- PT-403, RCS NR Pressure, fails HIGH

Which one of the following describes the effect on plant operation?

A. RHR-750 and 751, Loop 2 RHR Suction Valves, automatically close

B. RHR-750 and 751, Loop 2 RHR Suction Valves, remain open but the RCS pressure open permissive is lost

C. PCV-145, Low Pressure Letdown Pressure Control Valve, closes to restore pressure to setpoint

D. PCV-145, Low Pressure Letdown Pressure Control Valve, opens to restore pressure to setpoint

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Answer: B. RHR-750 and 751, Loop 2 RHR Suction Valves, remain open but the RCS pressure open permissive is lost

Justification: A- Incorrect. Once the valves are open, they will not automatically close on high pressure.
B- Correct. RCS pressure from PT 403 provides an open permissive (Does not allow suction valves to open above 445) at 445 psig so that RHR discharge piping will not be overpressurized upon REIR initiation. Once the valves are open, they will not automatically close on high pressure. The signal is sent to both valves.
C- Incorrect. There is no input from PCV-145 from PT-403. The signal that positions PCV-145 comes upstream of the valve from PT-145
D- Incorrect. There is no input from PCV-145 from PT-403. The signal that positions PCV-145 comes upstream of the valve from PT-145

Tier/Group 2/3

IOCFR5S.41
41
I OCFR55.43

BINIM Bank

K/A #: 005K401 Design features providing for overpressure mitigation

K/A Values: 3.0

Cog Level: Memory

References: SD-003, RHR
SD-021, CVCS, Page 38
H.B. Robinson
Site Specific Written NRC Examination

Reactor Operator
Final Worksheet
RHR LP, Objective 9
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 025

Number:

Question: Given the following conditions:

- Mode I at 100% RTP
- CWP 'A' and 'B' are mnning. CWP 'C' has just been returned to service after maintenance, and is available for start

CWP 'A' trips. Condenser backpressure rises from 4" Hg absolute to 5.5" Hg absolute and has stabilized.

Which one of the following provides the crew's required immediate operator actions?

A. Start 'C' Circ Water Pump

B. Verify V6-50A, 'A' Circ Water pump discharge closed

C. Verify standby vacuum pump is running

D. Secure any liquid radwaste release in progress

Answer: B. Verify V6-50A, 'A' Circ Water pump discharge closed

Justification: A- Incorrect. Only performed if vacuum does not stabilize
B- Correct
C- Incorrect. Only performed if vacuum does not stabilize
D- Incorrect. Not immediate action

Tier/Group 2/2

IOCFR55.41
41
IOCFRSS.43

BINIM Bank

K/A #: 2.4.4 Ability to recognize abnormal indications that are entry conditions to AOPs/EOPs

K/A Values: 4.0

Cog Level: Analysis

References: AOP-012, steps 4 and 5
LP AOP-012, Objective 8
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 026

Number:

Question: Given the following conditions:

- The unit is at 100% power
- Battery Charger 'A' is supplying Battery 'A' and its associated DC Bus loads
- Annunciator APP-036-D1 'BATTERY A/Al TROUBLE' hasjust alarmed
- The AO reports the cause of the trouble is a ground on DC Bus 'A'
- Based upon visual inspection, the AO believes the ground may be on Battery 'A'
- Engineering recommends that Battery 'A' be disconnected from DC Bus 'A'

Which one of the following describes the appropriate action while attempting to isolate the ground?

A. Supply the 'A' DC Bus with the 'A' Charger because it is the preferred supply lAW OP-601, DC Supply System

B. Supply the 'A' DC Bus with the 'A-I' Charger because it is the preferred supply lAW OP-601, DC Supply System

C. Supply the 'A' DC Bus with the 'A' Charger because it is the only charger available to supply DC Bus 'A' while disconnected from Battery 'A'

D. Supply the 'A' DC Bus with the 'A-I' Charger because it is the only charger available to supply DC Bus 'A' while disconnected from Battery 'A'

Answer: D. Supply the 'A' DC Bus with the 'A- 1' Charger because it is the only charger available to supply DC Bus 'A' while disconnected from Battery 'A'

Justification: A- Incorrect. Not preferred for ground isolation

B- Incorrect. Not OP preferred charger
C- Incorrect. Not available to supply bus while disconnected from battery
D- Correct.

Tier/Group 2/2

1OCFRSS.41
41
IOCFR55.43

BINIM Bank

KIA #: 063A201 Predict impact of grounds and use procedures to correct, control, or mitigate effects

K/A Values: 2.5

Cog Level: Comprehension

References: APP-036 step5 OP-601, 4.9 OMM-035, 8.6.5
LP OMM-35, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 027

Number:

Question: Given the following conditions:

- The reactor has tripped.
- Two stuck rods have been identified.

The crew is perforrning EPP-4, Reactor Trip Response.

The procedure directs boration to which one of the following conditions, and why?

A. Hot Shutdown, because boration to Hot Shutdown conditions assures reactor shutdown regardless of the number of control rods not fully inserted

B. Cold Shutdown, because boration to Cold Shutdown conditions assures reactor shutdown regardless of the number of control rods not fully inserted

C. Hot Shutdown, because boration to Hot Shutdown conditions is required to compensate for the worth of the most reactive stuck rod

D. Cold Shutdown, because boration to Cold Shutdown conditions is required to compensate for the worth ofthe most reactive stuck rod

Answer: B. Cold Shutdown, because boration to Cold Shutdown conditions assures reactor shutdown regardless of the number of control rods not fully inserted

Justification: A- Incorrect. Boration beyond Hot Shutdown conditions is required.
B- Correct.
C- Incorrect. Boration beyond Hot Shutdown conditions is required

D- Incorrect. Shutdown Margin already assumes that the most reactive rod is stuck, which would not require further boration

Tier/Group 1/1

IOCFRSS.41
41
1 OCFR5S.43

BINIM New

K/A #: 024A}C302 Knowledge of reasons for actions contained in EOP for Emergency Boration

K/A Values: 4.2

Cog Level: Memory

References: EPP-4, step 12 and background document
LP EPP-4, Objective 3

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H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 028

Question: Given the following conditions:

An ATWS has occurred. The crew is performing action contained in FRP-S. 1, Response to Nuclear Power Generation/ATWS.
The RO has initiated boration as follows:

- CVC-3 I OB, Loop 2 Cold Leg CR0 is open
- HIC-121, Charging Flow controller demand set to 0%
- 2 Charging pumps running at full speed
- I Boric Acid pump aligned for blend is running
- MOV-350, Boric Acid to Charging pump suction is OPEN

Which one of the following describes the boric acid flow indication that will be present?

A. No boric acid flow will be indicated

B. Fl-I 10, Boric Acid Bypass Flow, will provide the only indication of boric acid flow

C. FR-I 13, Boric Acid Flow Recorder, will provide the only indication of boric acid flow

D. Both Fl-Il 0 and FR- 113 will indicate boric acid flow

Answer: B. Fl-I 10, Boric Acid Bypass Flow, will provide the only indication of boric acid flow

Justification: A- Incorrect.

B- Correct. Flow will be through MOV-350 to the loop 2 Charging connection. This path passes through Fl-i 10.
C- Incorrect. FR-I 13 indicates boric acid flow to the blender; therefore flow will not be indicated on FR- 113.
D- Incorrect. FR-i 13 indicates boric acid flow to the blender; therefore flow will not be indicated on FR-I 13.

Tier/Group ill

IOCFRS5.41
41
IOCFR55.43

IB/NIM New

K/A #: 024AA1 .20 Operate or monitor manual boration valve and indicators

K/A Values: 3.2

Cog Level: Comprehension
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
References: FRP-S.1, Step 4
SD-021 CVCS
LP CVCS, Objective 3
H.B. Robinson
Site Specific Wriffen NRC Bxarnination
Reactor Operator
Final Worksheet

Question Number: RO 029

Question: Which of the following describes the basis for the Component Cooling Water system valve realignment upon receipt of a Containment Isolation Phase 'B' actuation?

A. Isolates additional potential release paths from containment

B. Reduces heat load on CCW system by eliminating unnecessary cooling requirements

C. Reduces Diesel Generator loading requirements with Containment Spray in operation

D. Reduces the severity of a containment pressure transient by eliminating potential energy sources

Answer: A. Isolates additional potential release paths from containment

Justification: A- Correct. CS actuation to reduce containment pressure and phase B isolation to eliminate release paths.

B- Incorrect. Although RCP cooling is no longer required, it is not the reason for phase B.
C- Incorrect. On a CS actuation with LOOP, CCW will not start. This is not the reason for the phase B alignment.
D- Incorrect. CCW may be a potential energy source to containment, but is not considered a significant contributor. Phase B is concerned with containment fission product barrier protection

Tier/Group 1/1

IOCFRSS.41
41
I OCFRSS.43
B/N/M New
K/A #: 026AK302 Reasons for alignment of CCWS on ESFAS actuation
K/A Values: 3.6
Cog Level: Comprehension

References: PATH-I Background, step grid B-7
Path-I LP, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 030

Question: Which one of the following describes the function of the Intermediate Range High Level Rod Stop?

Blocks rod withdrawal in MANUAL and...
A.is automatically defeated above P-I 0
B.must be manually defeated above P-tO
C.is automatically defeated above P-6
D.must be manually defeated above P-6

Answer: B. Must be manually defeated above P-to

Justification: A- Tncorrect. Must be manually defeated
B- Correct.
C- Incorrect. Must be manually defeated, and cannot be defeated until P-to
D- Incorrect. IR High Power rod stop at approximately 20% equivalent power. 1 out of2 IR channels required for rod stop. Must be manually defeated above P-tO, is automatically reinstated below P-b (3 out of4 PR < P-to setpoint)

Tier~Group2/1

1OCFR55.41
41
lOCFRSS.43
BINIM New

K/A #: 001K4.2O Knowledge of design features that provide for permissives or interlocks associated with increase from zero power

K/A Values: 3.2

Cog Level: Memory

References: RDCNT LP, Objective 9
SDO1O, NIS, page 36 of 80
Logic diagram sheet 9

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R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 031

Number:

Question: Given the following conditions:

- The plant is in Mode 6
- Fuel moves are in progress
- The Conveyor Car is in the SFP

R-5, SPENT FUEL PIT AREA radiation monitor goes into alarm

APP-036-B6, SPENT FUEL PIT LOW LEVEL, is illuminated

The crew is perforrning action contained in AOP-005, Radiation Monitoring. lAW Attachment S, the crew is attempting to determine the source of the SFP level decrease.

Which one of the following describes the reason the crew will be directed to move the Conveyor Car to the CV?

A. Allows isolation of the SEP from the Refueling Cavity by closing the Transfer Tube Gate Valve
B. Reduce SFP radiation levels by reducing the refueling equipment in the SFP
C. Allows the weir gate to be installed to isolate the SEP from the Refueling Cavity
D. Ensures control of refueling equipment will be maintained by the Refueling SRO in the CV.

Answer: A. Allows isolation of the SEP from the Refueling Cavity

Justification: A- Correct.

B- Incorrect. Rad levels should not be high from conveyor car
C- Incorrect. Not an action required lAW AOP-O05
D- Incorrect. Refueling evolutions are always controlled by the SRO in the CV

Tier/Group 1/2

IOCFRS5.41
41
IOCFR55.43

B/N/M New

K/A #: 061AK302 Knowledge of reasons for actions contained in alarm response for ARM alarms

K/A Values: 3.4

Cog Level: Memory

References: AOP-005, Attachment 5, Step 10

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H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
AOP-005 LP, Objective 3

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 032

Number:

Question: Given the following conditions:

A High Process Radiation monitor alarm is received in the control room.

The RO acknowledges the alarm at the Westronics recorder at Console 2. The red LED is lit

above R-31A, Main Steam Line radiation monitor.
Which one of the following describes how the RO will obtain a plot of the alarming radiation monitor?

A. Manually select the Group number containing R-3 IA. All monitors in the group will print out in red.

B. The Group containing R-3 IA will automatically begin plotting. All monitors in the group will print out in red.

C. Manually select the Group number containing R-3 IA. All monitors in the group will print out in black with the exception of the alarming monitor, which prints out in red.

D. The Group containing R-3 lA will automatically begin plotting. All monitors in the group will print out in black with the exception of the alarming monitor, which prints out in red.

Answer: D. The Group containing R-3 lA will automatically begin plotting. All monitors in the group will print out in black with the exception of the alarming monitor, which prints out in red

Justification: A- Incorrect. Not manually selected. Only one prints red
B- Incorrect. Only one prints red
C- Incorrect. Not manually selected
D- Correct. The westronics recorder has S groups of radiation monitors programmed in. Group I is normally plotting. Group 6 contains R-3 IA. When the alarm goes oft the alarming group automatically begins plotting.

Tier/Group 1/I

IOCFR55.41
41
I OCFRSS.43

B/N/M New

K/A #: 076AA204 Ability to determine or interpret process effluent radiation chart recorder

K/A Values: 2.6

Cog Level: Memory

References: RMS SD, pages 33 and 34
RMS LP, Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

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Question RO 033
Number:

Question: Which one of the following describes the RCP breaker interlock and indication associated with the Oil Lift System?

A. Oil lift pump mnning for greater than 2 minutes. White light illuminates at 650 psig lift pressure.

B. Oil lift pump running for greater than 2 minutes. White light illuminates at 600 psig lift pressure.

C. Oil lift pump running with pressure greater then 600 psig. White light illuminates at 650 psig lift pressure.

D. Oil lift pump mnning with pressure greater than 650 psig. White light illuminates at 600 psig.

Answer: C. Oil lift pump running with pressure greater then 600 psig. White light illuminates at 650 psig lift pressure

Justification: A- Incorrect. 2 minutes is not an interlock, just an admin requirement
B- Incorrect. 2 minutes is an adm in requirement, not an interlock
¼ C- Correct.
D- Incorrect. Values reversed

Tier/Group 2/1

IOCPR55.41
41
I OCFR55.43
BINIM New

K/A #: 003K101 Physical connections and/or cause-effect relationship between RCP and lube oil system

K/A Values: 2.6
Cog Level: Memory

References: SD-001, Pages 23 and 24
RCS LP, Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 034

Number:

Question: Given the following conditions:

- Mode 1 at 100% RTP
- No scheduled releases are in progress
- A small leak develops from the bottom of Waste Condensate Tank 'A'
- All ventilation systems are in a norrnal configuration

Which one of the following identifies an indication that would alert the operators of a leak in progress?

An increase in the level of monitor:

A. R-3, PASS Panel Area Monitor

B. R-18, Waste Disposal System Liquid Effluent Monitor

C. R-4, Charging Pump Room Area Monitor

D. R- I 4C, Plant Effluent Noble Gas, Low Range Monitor

Answer: D. R-14C, Plant Effluent Noble Gas, Low Range Monitor

Justification: A- Tncorrect. Charging Pump room is in vicinity of WCT 'A', the liquid from the leak will be collected in a sump and will not spill into the area.

fl- Inconrect. No liquid releases are in progress.
C- Inconrect. PASS panel is in vicinity of WCT 'A', the liquid from the leak will be collected in a sump and will not spill into the area.
D- Correct. The gas that comes out of solution will be exhausted past R-14C by the Aux building exhaust

Tier/Group1/2

IOCFR5S.41
41
1 OCFR5S.43

B/N/M Bank

K/A #: 059AKl02 Knowledge of the interrelations between the accidental liquid radwaste release and radioactive gas monitors

K/A Values 2.7

Cog Level: Comprehension

References: AOP-005, Rad Monitoring
RM LP, Objective 3
RM 5D036, page 12, step 2.4.8
Section 3.2.4, page 24 of 84
H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet

Question RO 035

Number:

Question: Given the following conditions:

- The unit is initially in a normal 100% power lineup
- The turbine trips due to a loss of condenser vacuum

Which one of the following describes the turbine control system signals which will send a trip

signal to the Reactor Protection System?

A. 1/3 63AST relays <45 psig or 2/4 governor valves closed

B. 2/3 63AST relays <45 psig or 4/4 governor valves closed

C. 1/3 63AST relays <45 psig or 1/2 stop valves closed

D. 2/3 63AST relays <45 psig or 2/2 stop valves closed

Answer: D 2/3 63AST relays <45 psig or 2/2 stop valves closed

Justification: A- Incorrect. Governor valves do not provide input. Requires 2 of3 relays
B- Incorrect. Governor valves do not provide input
C- Incorrect. Requires 2 of3 relays or both stop valves
D- Correct. Both stop valves and/or 2/3 AST relays provide trip signals.

Tier/Group 2/3
IOCFR55.41
41
I OCFRS5 .43

BINIM Bank

'CIA #: 045K120 Physical connections and/or cause-effect relationship between M'TG and Protection systems

K/A Values: 3,4

Cog Level: Memory

References: Logic Dwg 5379-3695
ERC LP Objective 9, page 17
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 036
Number:

Question: Given the following conditions:

- Mode I at 100% RTP
- APP 002-B7, CV NAR RANGE HI/LO PRESS illuminates
- CV Pressure indicates -0.4 psig, lowering slowly

Which one of the following describes the action necessary to clear the alarm lAW OP-921, Containment Air Handling?

A. Open Containment Pressure Relief Valves VI 2-10 and V12-I I until pressure is restored
B. Close Containment Pressure Relief Valves V12-l0 and V12-1 I until pressure is restored
C. Open Containment Vacuum Relief Valves V12-I2 and VI 2-13 until pressure is restored
D. Close Containment Vacuum Relief Valves V12-12 and V12-13 until pressure is restored

Answer: C. Open Containment Vacuum Relief Valves V12-12 and V12-13 until pressure is restored
Justification: A- Incorrect. Wrong valves, wrong manipulation
B- Incorrect. Wrong valves
C- Correct.
D- Incorrect. Wrong manipulation
Tier/Group 2/3

IOCFR55.4I
41
I OCFR5S.43
B/N/M New
K/A #: 103A409 Ability to operate/monitor containment vacuum system
KiAValues: 3.1
Cog Level: Memory

References: SD 037 CV IIVAC section 6.1, page 24 of 57
LP CVHVAC, Objective 3
OP-92I section S.4.3
APP-002-B7, action 5
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 037

Number:

Question: Given the following conditions:

- Mode 1 at 35% RTP

- Breaker 52/10,4KV Bus 1 to 4KV Bus 2 Tie, trips on fault

Which one of the following describes the automatic response of the electrical distribution system?

A. 4KV Bus 2 deenergizes, but is automatically picked up by the SUT through 'fast transfer'. EDO 'A' starts, but its output breaker does not close because voltage was only lost for 2 seconds

B. 4KV Bus 2 deenergizes and remains deenergized. EDO 'A' starts and picks up El. 'A' train SBO loads sequence on

C. 4KV Bus 2 deenergizes and remains deenergized. EDO 'A' starts and picks up El. No SBO loads sequence because E2 always had voltage, so there was not a loss of 'all AC power'

D. 4KV Bus 2 deenergizes, but is automatically picked up by the SUT through 'fast transfer'. EDG 'A' does not start because voltage was only lost for 2 seconds

Answer: B. 4KV Bus 2 deenergizes and remains deenergized. EDG 'A' starts and picks up El. 'A' train SBO loads sequence on

Justification: A- Incorrect. Fast transfer conditions not met
B- Correct.
C- Incorrect. The energization of E2 would not maffer to SBO loads on El or EDO 'A' start
D- Incorrect. Fast transfer conditions not met

Tier/Group 2/2

IOCFRS5.41
41
I OCFR5S.43

BINIM Bank

K/A #: 062K302 Knowledge of the effect that a loss or malfunction of AC Distribution will have on DG

K/A Values: 4.1

Cog Level: Comprehension

References: SD 006 ESF Section 6.3 page 24 of 25
KVAC LP Objective 14
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 038

Question: Given the following conditions:

- The unit has tripped due to a loss of condenser pressure
- The SUT had a phase to phase short and the primary side melted
- EDO 'A' failed to start and cannot be restarted
- EDO 'B' started and is carrying its emergency bus

Which one of the following describes the expected status of MDAFW pump 'A' breaker?

A. Shut because the SBO sequencer has cycled once and there is voltage present on its supply bus

B. Open because the SBO sequencer has cycled once and there is no voltage present on its supply bus

C. Cycling due to the SHO sequencer because there is no voltage present on its supply bus

D. Open because the 580 sequencer did not activate because all AC power was not lost

Answer: B. Open because the SBO sequencer has cycled once and there is no voltage present on its supply bus

Justification: A- Incorrect. Wrong power supply. MDAFW is powered from El, which has no power.
B- Correct.
C- Incorrect. Describes sequence operation prior to modification.
D- Incorrect. All AC does not have to be lost for sequencer operation. It is train dependent

Tier/Group 2/2

lOCFRS5.41
41
1 OCFRSS.43

BINIM Bank

K/A #: 064K302 Knowledge of the effect that a loss of the DO will have on ESF actuated equipment

K/A Values: 4.2

Cog Level: Comprehension

References: ESF LP Objective 14
ESF SD section 6.3.1, page 24 of39
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 039

Number:

Question: Given the following conditions:

- Mode 1 at 100% RTP
- An electrical fault occurs which results in a loss of power to Instrument Bus 3

Which one of the following describes the impact that the loss of Instrument Bus 3 has on the automatic operation of the Engineered Safeguards Features (ESF) Actuation System?

A. Neither train of the Engineered Safeguards Actuation System is affected
B. The sequencers will not be able to automatically start any Train 'B' Engineered Safeguards loads
C. The sequencers will not be able to automatically start any Train 'A' Engineered Safeguards loads
D. The sequencers will not be able to automatically start any Train 'A' or 'B' Engineered Safeguards loads

Answer: B. The sequencers will not be able to automatically start any Train 'B' Engineered Safeguards loads

Justification: A- Incorrect. Instrument Bus 3 supplies power to Train 'B' ESFAS.
B- Correct.
C- Incorrect. Train 'A' unaffected
D- Incorrect. Only Train 'B' affected

TieriGroup 2/1

10CFR55.41
41
1OCFRSS.43

BINIM Bank

K/A #: 013K201 Knowledge of bus power supplies to ESFAS/Safeguards equipment control

KiAValues: 3.6

Cog Level: Comprehension

References: ESF SD section 2.3 page 8 of 52
ESFAS LP Objective 6

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 040

Question: Given the following conditions:

- Mode6
- Core offload in progress 'AW FMP-019, Core and Insert Shuffle
- HVE-IA, CV PURGE EXHAUST UNIT, is running
- The REFUEL-PURGE selector switch on the RTGB is in REFUEL
- The REPA filter downstream of V12-8, PURGE EXHAUST VALVE, becomes clogged

Which one of the following describes the system response as airflow through HVE-IA slowly lowers?

A. APP-0l0-B6, HVE-lAIB AIRFLOW LOST/OVLD, will illuminate. V12-8, PURGE EXHAUST VALVE, will shut. HVE-IB will automatically start
B. HVE-lA will de-energize and the REFUEL-PURGE control circuit will automatically shift into the PURGE mode. HVE-IB will automatically start
C. APP-0l0-B6, HVE-l A/B AIRFLOW LOST/OVLD, will illuminate. HVE-IA will de energize, and HVE-1B will automatically start
D. R-1 1/12, CV PARTICULATE AND NOBLE GAS, Low flow alarm due to lower than expected CV exhaust flow

Answer: C. APP-O10-86, HVE-lA/B AIRFLOW LOST/OVLD, will illuminate. FIVE-IA will deenergize, and FIVE-lB will automatically start

Justification: A- Incorrect. Purge exhaust valve does not shut on low flow
B- Incorrect. The REFUEL-PURGE switch is manually operated
C- Correct.
D- Incorrect. Ri 1/12 low flow is for the radiation monitors, not the purge system.

Tier/Group2/2

IOCFRS5.41
41
IOCFRSS.43
B/N/M Bank

K/A #: 029K104 Physical connections and/or cause-effect relationship between purge system and purge system

K/A Values: 3.0

Cog Level: Comprehension

References: SD-037 CVFIVAC section 6.1
APP-0 1 0-B6
LP CVHVAC Objective 9

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 041

Question: Given the following plant conditions:

- CST is empty due to a weld failure on the tank
- RCS temperature is 4950 F
- AFW supply has been switched to the deepwell pumps
- The Steam Driven AFW Pump is out of service for maintenance
- Both Motor Driven AFW pumps are running
- The Motor Driven AEW Pump Discharge Flow Control Valves, FIC-1424 and FIC-1425, have been set to 200 gpm

Which one of the following provides the minimum number of deepwell pumps required to support this amount of AFW flow?

A. One(1)

B. Two(2)

C. Three(3)

___ D. Not possible

Answer: C. Three (3)

Justification: PSA significant action. Each deepwell pump is capable of 200 gpm. The total AFW required is 520 gpm (200+200+ (60X2) will require 3 deepwell pumps

Tier/Group 2/1

IOCFR5S.41

41

I OCFR5S.43

BINIM Bank

K/A #: 061K107 Physical connections and cause-effect relationship between AFW and Emergency Water Source

KiAVatues: 3.6

Cog Level: Comprehension

References: SD-042, Attachment 10.2
AFW LP, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 042

Number:

Question: Given the following conditions:

The plant has experienced a trip from 100% RTP
All SOs indicate 6% NR level

Upon initiation of AEW, which one of the following correctly describes the automatic response of the AFW system under these conditions?

A. The normally closed MDAFW pump discharge flow control valves (FCV-1424 and 1425) fully open

B. The normally open SDAFW pump discharge flow control valve (FCV-6416) throttles in the closed direction

C. The normally closed SDAFW pump discharge flow control valve (FCV-6416) throttles in the open direction

D. The normally open MDAFW pump discharge flow control valves (FCV-1424 and 1425) throttle in the closed direction

Answer: B. The normally open SDAFW pump discharge flow control valve (FCV-6416) throttles in the closed direction

Justification: A- Incorrect. The valves do not hilly open.
B- Correct.
C- Incorrect. FCV-6416 is normally open, and throttle closed
D- Incorrect. FCV 1424 and 1425 are norrnally closed

Tier/Group 2/1

IOCFRS5.41
41
10CFR55.43
B/N/M Bank (Also last year NRC exam)

K/A #: 061A301 Monitor automatic operation of AFW startup/flows
KiAValues: 4.2
Cog Level: Memory

References: LP AFW Objective 10
SD-042 AFW section 3.3 page 14 of 37
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 043

Number:

Question: Given the following conditions:

- The plant is in Hot Shutdown
- AFW pump 'A 'is running
- A small feedline break occurs between FCV-1424, 'A' AEW pump FCV, and isolation valve V2-16B (SG 'B' AFW isolation valve)

The RO closes FCV-1424 and the break flow stops.

A clearance is initiated to isolate the leak from all water sources.

Which one of the following describes an outcome of this event?

A. AFW flow from 'B' MDAFW pump will be available to all SOs

B. AFW flow from 'B' MDAFW pump will be available to 'A' and 'C' SOs only

C. AEW flow from 'B' MDAFW pump will be available to 'A' SG only

D. AFW flow from 'B' MDAFW pump will be available to 'C' SO only

Answer: B. AFW flow from 'B' MDAFW pump will be available to 'A' and 'C' SOs only

Justification: A- Incorrect. 'B' SO AFW flow is isolated.
B- Correct.
C- Incorrect. Flow is also available to C
D- Incorrect. Flow is also available to A
Tier/Group 2/1

IOCFR5S.41
41
I OCFR55.43

B/N/M Bank

K/A #: 061K302 Knowledge of the effect that a los or malfunction of the AFW system will have on the SO

K/A Values: 4.2

Cog Level: Memory

References: AFW LP Objective 3
SD-042, Figure 2, Page 38 of 49
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 044

Number:

Question: A Loss of DC Bus 'A' has occurred.

The crew is performing action contained in EPP-26, Loss of DC Bus A.

480 Volt Bus 2B is being energized from 480 Volt Bus 3.

Which one of the following describes the reason that the control switch for the tie breaker is

held in the CLOSE position for 5 seconds?

A. Ensures energization of undervoltage relays

B. Ensures deenergization of undervoltage relays

C. Ensures energization of Amptector overcurrent devices

D. Ensures deenergization of Amptector overcurrent devices

Answer: A. Ensures energization of undervoltage relays

Justification: A- Correct. The undervoltage relays need time to pick up.
B- Tncorrect. If they dropped out (deenergized) the breaker would not close.
C- Incorrect. The amptectors provide overcurrent protection for busses without DC control power. They are not affected by the operation of the tie breaker control switch from Bus 3
D- Incorrect. The amptectors provide overcurrent protection for busses without DC control power. They are not affected by the operation of the tie breaker control switch from Bus 3

Tier/Group 1/2
IOCFRS5.41
41
IOCFRSS.43

B/N/M New

K/A #: 058AK302 Knowledge of reasons for actions contained in EOP for loss of DC power

K/A Values: 4.0

Cog Level: Memory

References: EPP-26, Loss of DC bus 'A' step 10 (Page 6 of 45)
LP EPP 26 Objective 3.
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 045

Question: Given the following plant conditions:

- The plant is operating at 100% power
- Rod D-8 (Control Bank D) rod bottom light illuminates
- IRPI for D-S reads 2 inches
- APP-005-F2, ROD BOTFOM ROD DROP, illuminates
- Control Bank D is at 218 steps
- Power Range NIs indicate 100%

The crew enters AOP-001, Malfunction of Reactor Control System

Which one of the following provides the section ofAOP-00l that will be used to respond to the above conditions?

A. Section A, Dropped Rod

B. Section B, Immovable/Misaligned Rod

C. Section C, Continuous Rod Motion

0. Section D, Individual Rod Position Indication Malfunction

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Answer: D. Section D, Individual Rod Position Indication Mallunction

Justification: A- Incorrect- Power level did not change, no prompt drop; therefore no dropped rod
B- Incorrect-. No indication of a misaligned rod

C- Incorrect.- No indication of continuous rod motion
D- Correct- All plant conditions given describe an IRPI malfunction. Reference AOP-00 I, Main Body; therefore Section D would be used to address the problem

Tier/Group 2/1

IOCFRSS.41
41
IOCFRSS.43

B/N/M New

K/A #: 001K6.13 Knowledge of the effect that a loss or malfunction of the Rod Position Indication system will have on the Rod Control System (Location and operation of RPI)

K/A Values: 3.6

Cog Level: Comprehension

References: AOP-001 Main Body, page 1 thru 7
AOP-001 Lesson Plan Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 046

Question: Given the following conditions:

The plant is operating at 100% power when a Loss of Off-Site Power and Reactor Trip occurs.

All equipment operates as expected.

Which one of the following describes the status of cooling water to RCPs Five (5) minutes into

the event?

A. Seal Injection will provide the only cooling water to the RCP thermal barrier heat exchangers

B. CCW Pumps 'A' and 'B' running to provide cooling to RCP bearings

C. CCW Pumps 'B' and 'C' running to provide cooling to RCP bearings

D. CCW Pumps 'A', 'B', and 'C' running to provide cooling to RCP bearings

Answer: C. CCW Pumps 'B' and 'C' running to provide cooling to RCP bearings

Justification: A- Incorrect. 2 pumps auto start
B- Incorrect. Pump 'A' does not start. DS bus deenergized
C- Correct
D- Incorrect. Pump 'A' does not start. DS bus deenergized

Tier/Group 2/1

IOCFRS5.41
4]
IOCFR55.43

B/N/M New

K/A #t 003Kl.02 Knowledge of Power supplies to CCW pumps (Relation to RCP)

K/A Values: 2.5

Cog Level: Memory

References: CCW SDO13, section 5.1.3
CCW LP Objecticve 3 and 6
H.B. Robinson

Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 047

Question: Given the following conditions:

The plant is operating at 100% power. Rod Control is in MANUAL. All other control Systems are operating in automatic.

Which one of the following describes the effect of temperature changes in the Chemical and Volume Control System (CVCS)?

A. As NRHX outlet temperature INCREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS boration

B. As NRHX outlet temperature INCREASES, ion exchanger affinity for boron DECREASES, resulting in a potential RCS dilution

C. As NRRX outlet temperature DECREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS dilution

D. As NRHX outlet temperature DECREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS boration

Answer: C. As NRHX outlet temperature DECREASES, ion exchanger affinity for boron INCREASES, resulting in a potential RCS dilution

Justification: A- Incorrect. Opposite effect on both affinity and RCS effect
B- Incorrect. Opposite RCS effect
C- Correct. If NRHX outlet temperature is decreased, the ron exchangers will have a higher affinity for boron, causing a small dilution event, resulting in a rise in reactor power.
D- Incorrect. Opposite RCS effect.

Tier/Group 2/1

IOCFR5S.41
41
IOCFR55.43

B/N/M New

IQA #: 004K5.36 Knowledge of the operational implications of the following as they apply to CVCS: Solubility of boron in water; temperature effect

IQA Values: 2.5

Cog Level: Comprehension

References: CVCS SD
CVCS LP, Objective 14
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 048

Question: Given the following conditions:

The plant is operating at 100% power. The CVCS is in a normal lineup with all equipment in

service.
Which one of the following describes the operation of Emergency Makeup to Charging suction valve, LCV-1 !SB?
A. Automatically opens when BOTH LT-1 12 and LT-I 15, VCT level transmitters, indicate Low VCT level.

Interlocked with VCT Outlet Valve LCV-1 15C so that both valves cannot be open at the same time

B. Automatically opens when EITHER LT-1 12 or LT-l 15, VCT level transmitters, indicate Low VCT level.
Interlocked with VCT Outlet Valve LCV- 11 SC so that both valves cannot be closed at the same time

C. Automatically opens when BOTH LT-1 12 and LT-1 15, VCT level transmitters, indicate Low VCT level.
Interlocked with VCT Outlet Valve LCV- II SC so that both valves cannot be closed at the same time

D. Automatically opens when EITHER LT- 112 or LT- 115, VCT level transmitters, indicate Low VCT level.
Interlocked with VCT Outlet Valve LCV- 11 SC so that both valves cannot be open at the same time

Answer: C. Automatically opens when BOTH LT-1 12 and LT-1 15, VCT level transmitters, indicate Low VCT level. Interlocked with VCT Outlet Valve LCV-l I SC so that both valves cannot be closed at the same time

Justification: A- Incorrect. Both cannot be shut at same time
B- Incorrect. Need both indicators to open valve
C- Correct.
D- Incorrect. Need both indicators and valves cannot be closed at same time

Tier/Group2/1

10CFR55.41
41
I OCFR55.43
B/N/M New

K/A #: 004K4.07 Knowledge of CVCS dessign features and/or interlocks which provide for the following: Water Supplies

K/A Values: 3.0

H.B~ Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Cog Level: Memory

References: CVCS SD section 5.2.3 and 5.2.4 and figures 17 and 17A
CVCS LP Objective 9

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H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 049

Number:

Question: Given the following plant conditions:

• The plant was Mode 1 at 100% RTP
eAII systems are in their normal configuration
• A Loss of Off-Site Power occurred and both EDG1s auto started
• Service Water pumps have been started by the blackout sequencer
• An SI occurs immediately after SW pumps started

Which ONE (I) of the following describes the response to this event?

The Blackout sequence will:

A. continue to completion, any additional equipment will be started by the SI sequence.

B. continue to completion, any additional equipment will require a manual start.

C. stop, all loads will be stripped and restarted by the SI sequence.

D. stop, the SI sequence will start the required additional loads.

Answer: D. stop, the SI sequence will start the required additional loads.

Justification: A- Incorrect- The blackout sequence is in service at the time of the SI. SI signal stops the blackout sequence.
B- Incorrect- The blackout sequence is in service at the time of the SI. SI will start the additional loads
C- The blackout sequence does stop on SI. Loads will not be stripped
D- Correct

Tier/Group2/1

IOCFR5S.41
41
IOCFl&55.43

B/N/M Bank

K/A #: 013K5.02 Knowledge of the operational implications of Safety System Logic and Reliability

K/A Values: 2.9

Cog Level: Comprehension

References: ESF 5D006, section 6.3.3, page 25 of 39
ESF LP Objective 10
H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 050

Question: Given the following conditions:

- Mode 1 at 14% RTP
- POWER ABOVE P-b Permissive Status light is ILLUMINATED
- The RO presses the IR LOGIC DEFEAT TRAIN A pushbutton

Which one of the following describes the effect on the operation of the plant?

A. INTERM RANGE TRIP BLOCKED Permissive Status light is ILLUMINATED.
Outward Rod Motion will NOT be blocked above 20% equivalent power on N-36

B. INTERM RANGE TRIP BLOCKED Permissive Status light is EXTINGUISHED.
Outward Rod Motion will NOT be blocked above 20% equivalent power on N-36

C. INTERM RANGE TRIP BLOCKED Permissive Status light is ILLUMINATED.
Outward Rod Motion will be blocked above 20% equivalent power on N-36

D. INTERM RANGE TRIP BLOCKED Permissive Status light is EXTINGUISHED.

Outward Rod Motion will be blocked above 20% equivalent power on N-36

Answer: 0. INTERM RANGE TRIP BLOCKED Permissive Status light is EXTINGUISHED.
Outward Rod Motion will be blocked above 20% equivalent power on N-36

Justification: A- Incorrect. Opposite effect of illuminated light. Both pushbuttons must be depressed to defeat the rod stop. The permissive light will only be illuminated when the trip is actually blocked.
B- Incorrect. Motion will be blocked
C- Incorrect. Light will not be illuminated
D- Correct

Tier/Group2/1

IOCFR55.41
41
IOCFRSS.43

B/N/M Bank ~I-09-021)

K/A #: 015A4.03 Ability to operate and/or monitor in the control room: Trip Bypasses

Ic/Avalues: 3.8

Cog Level: Comprehension

References: NIS SOOIO Figure 29
NJS LP Objective

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H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 051

Question:

Given the following conditions:

- A plant startup is in progress with reactor power at 4%
- The Main Generator is being paralleled to the grid
- Power is lost to Instrument Bus 2

Which one of the following describes the plant response for loss of power to Instrument Bus 2?

A. Reactor Trip due failed Source Range channel

B. Reactor Trip due to failed Intermediate Range channel

C. Turbine Reference Runback due to Power Range failure

D. No effect because Reactor Power is less than the P-I 0 setpoint

Answer: B. Reactor Trip due to failed Interrnediate Range channel

Justification: A- Incorrect. SR trips blocked > P6
B- Correct
C- Incorrect. Generator not connected to grid
D- Incorrect. Less than PlO, IR 1 out of2 trip logic.

Tier/Group 2/1

IOCFRS5.41
41
IOCFR55.43

B/N/M Bank

K/A #: 015K6.01 Knowledge of the effect that a loss or malfunction of sensors, detectors or indicators will have on the NIS

K/A Values: 2.9

Cog Level: Comprehension

References: Logic CP3OO-5379-2755
NIS SDO1O, Page 36 ofSO
NIS LP, Objective 9
H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet
Question RO 052

Number:

Question: Given the following conditions:

The plant is operating at 100% power. All systems are in their normal alignments.

Which one of the following describes the expected RVLIS indication on the Inadequate Core Cooling Monitor (ICCM)?

	Dynamic Read	Full Ran~e	Upper Ran~
A.	110%	108%	108%
B.	RCPON	108%	108%
C.	110%	RCPON	RCPON
D.	RCPON	RCPON	RCPON

Answer: C. 110% RCP ON RCP ON

Justification: A- Incorrect. With RCPs on, FR and UR only indicate RCPs ON, not %
B- Incorrect. With RCPs on, FR and UR only indicate RCPs ON, not %
C- Correct. Full Range and Upper Range are used during Natural Circulation. The dynamic head is an indication of void fraction, with a low fraction indicating a high level. At 100% power with 4 RCPs operating the dynamic head will be maximum at 110%.
D- Incorrect. No RCPs ON indication for dynamic head

Tier/Group 2/I

IOCFRSS.41
41
I OCFR5S.43
B/N/M New

K/A #: 017A3.01 Ability to operate or monitor in the control room: Forced, Natural, or interrupted circulation of the RCS

K/A Values: 3.6
Cog Level: Memory

References: ICCM SD Os 1, Figure 28
~CCM LP, Objective S
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 053
Number:
Question: Given the following conditions:
A Large Break LOCA has occurred.

- Train 'A' Engineered Safeguards did not automatically actuate
- Train 'B' Engineered Safeguards components automatically actuated with the exception of 'B' CV Spray Pump
- Containment Spray Pump 'A' is OGS for maintenance
- Containment Spray Pump 'B' failed upon automatic initiation and cannot be restarted.

Which one of the following describes the minimum action required to ensure containment pressure remains below its design limit?

A. Verify either Containment Air Recirc fan HVH-3 OR HVH-4 is running

B. Verify both Containment Air Recire fans HVH-3 and HVH-4 are running

C. Start either Containment Air Recirc fan HVH-1 or HVH-2.

D. Start both Containment Air Recirc fans HVH-l and HVH-2.

Answer: D. Start both Containment Air Recirc fans HVH-1 and HVH-2.
Justification: A- Incorrect. 4 CAR fans are required to maintain design basis.
B- Incorrect. 4 CAR fans are required to maintain design basis.
C- Incorrect. 4 CAR fans are required to maintain design basis.
D- Correct. Ifno Containment Spray Pumps are in service, then all 4 CAR fans are required to maintain design basis. For different combinations ofavailable spray equipment, different numbers offans are required. The distractors test different combinations of fan requirements
Tier/Group 2/1

IOCFR55.41
41
IOCFRSS.43
BN$4 New

K/A#: 022A1.04 Ability to predict or monitor changes in parameters to prevent exceeding design limits associated with operating the CCS controls including Cooling Water Flow

K/A Values: 3.2
Cog Level: Comprehension
References: CV HVAC SD037, page 22 of36 CV HVAC 5D037, page 25 of36
CV HVAC LP ObjectivesESFAS $9006, page 20 of39
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question Number: RO 054

Question: Given the following conditions:

The plant is operating at 100% power.

Due to a loss of Containment FIVAC, containment temperature has risen from 970F to I 190F. Actions are in progress to restore containment FIVAC.

If the temperature continues to rise in containment, which one of the following describes the effect on pressurizer level indication?

A. The controlling pressurizer level channel will indicate slightly lower than actual level, and remain higher than the cold-calibrated pressurizer level instrument

B. The controlling pressurizer level channel will indicate slightly higher than actual level, and remain higher than the cold-calibrated pressurizer level instrument

C. The controlling pressurizer level channel will indicate slightly lower than actual level, and remain lower than the cold-calibrated pressurizer level instrument

D. The controlling pressurizer level channel will indicate slightly higher than actual level, and remain lower than the cold-calibrated pressurizer level instrument

Answer: B. The controlling pressurizer level channel will indicate slightly higher than actual level, and remain higher than the cold-calibrated pressurizer level instrument

Justification: A- Incorrect. Channel will indicate higher
B- Correct. The cold calibrated pressurizer level instrument is calibrated for temperatures far lower than normal operating temperatures and will indicate lower. When the containment atmospheric temperature rises, the pressurizer reference leg will heat up, causing density to decrease, and exerting less pressure on the reference leg side of the transmitter. This will result in an increase in indicated level.
C- rncorrect. Higher than actual, and above Cold-Cal
D- Incorrect. Higher than cold-cal
TieriGroup 2/1

IOCFR55.41
41
I OCFR55.43

B/NIM New (Conditions modified and distractors slightly changed from 1998 Seabrook NRC examination)

K/A #: 022K3.02 Knowledge of the effect that a loss or malfunction of Containment Cooling will have on containment instrumentation readings

K/A Values: 3.0

Cog Level: Comprehension
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
____ References: Pzr LP Objective 14
OFES Components - Sensors & Detectors
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 055

Number:

Question: Given the following conditions:

- Mode I at 45% RTP
- 'B' Condensate Pump and 'B' Main Feedwater Pump are operating
- Breaker 52/20, UNIT AUX TO 4KV BUS 4 BKR, trips on fault
- Plant equipment operates as designed

Which one of the following describes the impact on the plant and the action required to restore secondary inventory?

A. Feedwater is lost due to Feedwater isolation and Feedwater pump trip on low Tave with Reactor Trip. AFW will be manually restored in FRP-H.l, Loss of Secondary Heat Sink

B. 'B' Condensate pump and 'B' MEW pump will be lost due to loss of bus 4. Verity 'A' Condensate pump and 'A' MEW pumps automatically start on low discharge pressure lAW AOP-010, Condensate/Feedwater Malfunctions

C. 'B' Condensate pump and 'B' MFW pump will be lost due to loss ofBus 4. AFW flow will be verified in PATH-i or EPP-4, Reactor Trip Response

D. 'B' Condensate pump and 'B' MFW pump will be lost due to loss of Bus 4. 'A' Condensate pump will automatically start but A' MFW pump must be manually restarted in PATH-I or EPP-4, Reactor Trip Response

Answer: C. 'B' Condensate pump and 'B' MFW pump will be lost due to loss of Bus 4. AFW flow will be verified in PATH-I

Justification: A- Inconrect. The feedwater isolation signal does not trip MFW pumps. AFW pumps will start on low SO level and be verified in PATH-I
B- Incorrect. Loss of 4KV bus 4 will cause loss of both pumps. Both pumps have standby features but neither will start. The low discharge pressure auto start of a condensate pump requires the other condensate pump breaker to be closed. The MEP auto start requires a mnning condensate pump.
C- Correct.
D- Incorrect. The low discharge pressure auto start of a condensate pump requires the other condensate pump breaker to be closed.

Tier/Group2/1

IOCFR5S.41
41
1OCFR55.43

BINIM Modified from bank question FW-06-007

K/A #: 056A2.04 Ability to predict the impacts of a loss of condensate pumps on the system, and use procedures to mitigate the consequences of the malfunction
H.B. Robinson
Site Specific Wrinen NRC Examination

Reactor Operator
Final Worksheet

K/A Values: 2.6

Cog Level: Comprehension

References: FW LP, Objective 14 and Objective 6
PATR-1 and EPP-4
FW SD027 pages 17 and 18 of 33
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 056

Question: Given the following conditions:
The reactor tripped from 100% power.

- A Loss of Heat Sink has occurred
- Safety Injection is actuated
- The crew is performing actions contained in FRP-H. I, Loss of Secondary Heat Sink
- AFW flow cannot be restored
- 'A' Condensate pump has been started

Which one of the following describes the MINIMUM action required to start a Main Feedwater pump?

A. Place all FEEDWATER ISOLATION Key Switches in the OVRD/RESET position

B. Reset Safety Injection and place all FEEDWATER ~SoLATlON Key Switches in the OVRD/RESET position

C. Close Reactor Trip Breakers and place all FEEDWATER ISOLATION Key Switches in the OVIW/RESET position

D. Close Reactor Trip Breakers, Reset Safety Injection, and place all FEEDWATER ISOLATION Key Switches in the OVRD/RESET position

Answer: A. Place all FEEDWATER ISOLATION Key Switches in the OVRD/RESIET position

Justification: A- Correct.
B- Incorrect. SI signal does not have to be reset
C- Incorrect. If the key switches were not placed in override, the trip breakers would have to be reclosed to clear the feedwater isolation signal.
D- Incorrect. SI does not have to be reset, trip breakers do not have to be reclosed. Placing the key switches in override/reset will bypass all FW isolation signals.

Tier/Group 2/I

IOCFRSS.41
41
IOCFR55.43
B/N/M New

K/A #: 059A4. II Ability to manually operate or monitor in the control room; Recovery from automatic feedwater isolation

K/A Values: 3.1
Cog Level: Comprehension
References: FW 5D027, Page 19 of33 FW LP, Objective S
FRP-H.1, step 16 and note
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 057

Number:

Question: The plant is in Mode 1, 100% RTP.

Which one of the following Feedwater System conditions requires entry into Technical Specifications?

A. FW-24, FW TO SO 'A' DRAIN, is found locked closed

B. FW-20], SO WLU ISOL TO AND FROM SO 'A' is found locked closed

C. FCV-479, SO 'A' FWRV BYPASS, is stuck 20% open and cannot be moved

0. FCV-478, SO 'A' FWRV is being controlled in MANUAL from the RTGB due to loss of an automatic SO level control input

Answer: C. FCV-479, 50 'A' FWRV BYPASS, is stuck 20% open and cannot be moved

Justification: A- Incorrect. Represents required Mode 1 valve position
B- Incorrect. Represents required Mode I valve position
C- Correct. If the FWRV bypass cannot be closed, it is inoperable and entry toTS 3.6.3 and 3.7.3 must be made.
D- Incorrect. If the FWRV is in Manual, it is not inoperable if it can be controlled and meet its closure time on a FWI signal

Tier/Group 2/1

IOCFR55.41
41
I OCFR55.43

B/N/M New

K/A #: 059 Generic 2.1.33 Ability to recognize system operating parameters which are entry conditions for Technical Specifications

K/A Values: 3.4

Cog Level: Memory

References: FW LP, Objective 12
FW 5D027, page 2land 22
Tech Specs3.6.3, Containment Isolation valves, and 3.7.3, Main Feed Valves
H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet

Question RO 058

Number:

Question: Given the following conditions:

The plant is operating at 100% RTP.

The following radiation monitors go into alarm:

- R- 15, Condenser Air Ejector Gas Monitor
- R-19A, SG Sample Radiation Monitor
- R-37, Condensate Polisher Waste Effluent Monitor

All other Radiation Monitors are normal.

Which one of the following describes the plant response to these indications?

A. FCV-1933A and B, SO A Blowdown Sample Isolation Valves CLOSE.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

B. FCV-1933A and B, SO A Slowdown Sample Isolation Valves CLOSE.
V1-3 1, Blowdown Isolation Valve to catch basin, CLOSES.

C. V1-3 I, Slowdown Isolation Valve to catch basin, CLOSES.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

D. VI-31, Blowdown Isolation Valve to catch basin, CLOSES.

FCV-1933A and B, SO A Blowdown Sarnple Isolation Valves CLOSE.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

Answer: A. FCV-1933A and B, SO A Blowdown Sample Isolation Valves CLOSE.
RCV-10549, Condensate Polisher Discharge to catch basin CLOSES.

Justification: A- Correct.
B- Incorrect. VI-31 will only close ifRl9A,B,C are in alarm. RCV 10549 not included
C- Incorrect. V1-3 I will only close ifRl9A,B,C are in alarm. FCV 1933A/B not included
D- Incorrect. V1-3 1 will only close ifRlQA,B,C are in alarm

Tier/Group2/1

IOCFRS5.41
41
1OCFR5S.43

B/N/M Bank

K/A #: 0681(4.01 Knowledge of design features or interlocks which provide for handling of hot, acidic, or radioactive liquids

K/A Values: 3.4

Cog Level: Comprehension
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

References: RM LP Objective 9
RM SDOI9, Attachment 10.2
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 059

Number:

Question: A Gaseous Waste Discharge is being planned.

The calculated setpoint for Waste Gas Decay Tank Release Isolation valve, RCV-014, is 35%. RCV-014 is inadvertently set to 55%.

Which one of the following describes the potential effect on the plant?

A. PCV-1040, Pressure Reducing Release discharge, will close due to a low pressure on the WGDT

B. RCV-014 will close due to a low DP from the WGDT to the Plant Stack

C. RCV-014 will close due to a high radiation on the Plant Stack, Noble Gas Monitor, R-14C

D. Cover Gas Pressure Control Valve PCV-1027, Cover Gas Header Pressure control valve, will close to prevent overpressure on the WGDT

Answer: C. RCV-014 will close due to a high radiation on the Plant Stack, Noble Gas Monitor, R-14C

Justification: A- Incorrect. PCV-l040 provides a constant DP across RCV-014 to provide a constant release rate regardless of DP between WGDT and plant stack

B- Incorrect. RCV-014 is set based upon the activity in the tank and required flowrate to prevent exceeding limits. This is partially based upon available dilution flow from the plant ventilation system. If the valve is set too high, then a high radiation condition may exist, resulting in trip of the release valve.
C- Correct. See above
D- Incorrect. PCV-1027 closes to prevent overpressure on the WGDT when vent header pressure is too high.

Tier/Group 2/I

IOCFRSS.41
41

I OCFRSS.43
BINIM New

K/A #: 071A1.06 Ability to predict or monitor changes in parameters associated with operating the Waste Gas system controls including ventilation systems

K/A Values: 2.5

Cog Level: Comprehension

References: WD SD023, page 51 of 62
WD LP Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 060

Number:

Question: Plant Cooldown to 1400 is in progress.

Which one of the following actions during the cooldown is provided to minimize the

probability of a brittle fracture event?

A. Removing Safety Injection pumps from service

B. Maintaining Letdown flow at maximum during the RCS cooldown

C. Maintaining RCPs running for as long as possible during the cooldown

D. Maintaining Safety Injection Accumulators in service until RCS pressure is 600 psig
Answer: A. Removing SI pumps from service during the cooldown

Justification: A- Correct. Removing SI pumps removes mass input possibility.
B- Incorrect. Letdown can be at any value, but is plausible because one of the potential initiating events of an LTOP is ch&ging/letdown mismatch.
C- Incorrect. RCPs ensure even cooldown throughout RCS but RCP cold restart is the LTOP concern.
D- Incorrect. Accumulators are secured at 1000 psig
Tier/Group2/2

1OCFR55.41
41
1 OCFRS5.43
B/N/M New

K/A #: 006K504 Knowledge of operational implications of brittle fracture, including causes and preventive actions

K/A Values: 2.9

Cog Level: Memory

References: TS 3.5.2 basis ECCS pumps
TS 3.4.12 basis LTOP
SI LP Objective 12
H.B. Robinson
Site Specific Wrinen NRC Examination
Reactor Operator
Final Worksheet
Question RO 061

Number:

Question: Given the following conditions:

- Reactor power is at 68%.
- The EH Turbine Control is in the IMP OUT position

One Turbine control valve drifts OPEN approximately 10% from its initial position.

Assuming no action by the crew, which one of the following describes the initial effect of the valve failure?

	Steam Pressure	RCS Tave	Reactor Power
A.	Increase	Increase	Decrease
B.	Increase	Decrease	Increase
C.	Decrease	Increase	Decrease
D.	Decrease	Decrease	Increase

Answer: D. Decrease Decrease Increase

Justification: A- Incorrect. All parameters reversed
B- Incorrect. Steam pressure reversed
C- Incorrect. Tave/Reactor power reversed
D- Correct. If a control valve fails open, steam pressure will decrease, due to the increased steam flow and no action to raise RCS temperature. (Control Rod Withdrawal) If steam pressure decreases, Tcold will also decrease, resulting in a lower Tave. Reactor power will increase because of increased steam flow Increased power may also be seen on the higher RCS Delta T

Tier/Group2/2

1OCFRSS.41
41
I OCFR5S.43
B/N/M New

K/A #: 035K501 Knowledge of the operational implications of the following concepts as they apply to the SO system: Effects of secondary parameters, pressure, and temperature, on reactivity

K/A Values: 3.4

Cog Level: Comprehension

References: Did not deterrnine a facility reference. This is a OFES type question
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 062

Number:

Question: Given the following conditions:

- Plant is operating at 50% RTP
- 'A' Train ofFeedwater is in service
- 'B' Condensate pump has just been started lAW GP-O05, Power Operation
- 'A' Main Feedwater Pump trips on overload

Which one of the following describes the initial response of the Feedwater System with no operator action?

A All SO Feedwater regulating valves throttle closed. 'B' Main Feedwater pump must be manually started

B. All SO Feedwater regulating valves throttle closed. 'B' Main Feedwater pump will automatically start

C. All SO Feedwater regulating valves throttle open. 'B' Main Feedwater pump must be manually started

D. All SO Feedwater regulating valves throttle open. 'B' Main Feedwater pump will automatically start

Answer: D. All SO Feedwater regulating valves throttle open. "B" Main Feedwater pump will automatically start

Justification: A- Incorrect. FRVs will open in response to the reduced SO level or reduced feedwater flow causing steam/feed mismatch. FRVs throttle open to maintain SO level constant

B- Incorrect. FRVs will open in response to the reduced SO level or reduced feedwater flow causing steam/feed mismatch. FRVs throttle open to maintain SO level constant
C- Incorrect. 'B' MFWP will start if'B' Condensate pump is running
D- Correct.

Tier/Group2/2

IOCFRSS.41
41
IOCFRS5.43

B/N/M New

IC/A #: 035A3.01 Ability to monitor automatic operation of SO level control

K/A Values: 4.0

Cog Level: Comprehension

References: EW SD027 page 15/16 of 33
SO LP Objective 14
H.B. Robinson
Site Specific Wriflen NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 063

Question: What is the basis for maintaining PRT level less than the high level alarrn setpoint of 83% and when does it apply?

The basis for this level is to minimize the possibility of thermal shocking the...

A. PRT Rupture Discs and affecting their rupture pressure. It only applies when PRT temperature is above 200 degrees

B. PRT Rupture Discs and affecting their rupture pressure. It applies at all times.

C. Pressurizer Safeties and PORVs which could cause them to leak. It only applies when Pressurizer temperature is above 200 degrees

D. Pressurizer Safeties and PORVs which could cause them to leak. It applies at all times.

Answer: C. Pressurizer Safeties and PORVs which could cause them to leak. It only applies when Pressurizer temperature is above 200 degrees

Sustification: A- Incorrect. Not applicable for Rupture discs
B- Incorrect. Does not apply at all times and wrong components
C- Correct
D- uncorrect. Does not apply at all times

Tier/Group 2/2

IOCFRS5.41
41
I OCFR55.43

B/N/M Modified (Bank question Pzr-10-00l attached)

K/A #: 010K6.04 Knowledge of the effect that a loss or malfunction of PRT will have on Pzr Pressure control system

K/A Values: 2.9

Cog Level: Memory

References: Op-i 03, Page 5, P&L 4.4
PZR SD059, Page 24 of 27
PZR LP Objective 16
H.B. Robinson

Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 064

Number:

Question: Given the following plant conditions:

- A plant cooldown is in progress
- RCS temperature is 3570F.
- RCS Pressure is 370 psig
- Both PORV OVERPRESSURE PROTECTION Permissive switches have been placed in LOW-PRESSURE position.

Following the switch alignment, the following alarm is received in the control room:

- APP-003-A3, PCV-456 LP PROT ACT/TROUB

Which one of the following is the likely cause of this alarm?

A. RC-535, PORV BLOCK, is closed

B. A temperature input to the actuation circuitry has failed high

C. A pressure input to the actuation circuitry has failed low

D. RCS Pressure is too high to place LTOPP in service. PORV operation has occurred

Answer: A. RC-535, PORV BLOCK, is closed

Justification: A- Correct. When LTOPP is in service, alarm will come in either when the block valve is closed or when actuation occurs.
B- Incorrect. If a temperature instrument fails high, the auctioneered low input is still providing alarm control.
C- Incorrect. If a pressure input fails low, LTOPP may not actuate as required but there would be no input to the alarm
D- Incorrect. Pressure must be at or above 400 psig for actuation to occur. The alarm will also come in if auctioneered low temp is below 360 deg F Current pressure is only 370 psig

Tier/Group2/2

l0CFR55A~
41
IOCFR55.43

B/N/M New

K/A #: 010A4.03 Ability to manually operate or monitor in the control room: PORV and Block Valves

K/A Values: 4.0

R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Cog Level: Comprehension

References: Pzr SDOS9, pages 16 and 17, 19 and 20 of27, and figure 13
Pzr LP Objective 8

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 065

Number:

Question: Given the following conditions:

The plant is operating in Mode 1, 100% RTP.

In preparation for refueling, fliel moves are taking place in the Spent Fuel Pit.

R-1, Control Room Area Radiation Monitor, fails its channel check. Repairs are estimated to take 8 hours.

Using the reference provided, which one of the following actions, if any, must be taken?

A. No action required for 7 days

B. Immediately suspend fuel movement in the Spent Fuel Pit

C. Immediately place one CREFS Train in Emergency Pressurization Mode

D. Initiate action to place the plant in Mode 3 within 6 hours and Mode 5 within 36 hours

Answer: C. Immediately place one CREFS Train in Emergency Pressurization Mode

Justification: A- Incorrect. Wrong action
B- meorrect. Wrong action
C- CorrectTech Specs require CREFS initiation with Rad monitor mop, or stop fuel moves.
D- Incorrect. Wrong action

The distractors are all part of the TS action required for different failures in the same TS

Tier/Group 2/3

IOCFR5S.41
41/43 (REFERENCE ATrACHED. REQUIRED FOR ROs)
I OCFR55.43

BINIM New

K'A #: 034K6.02 Knowledge of bow a loss or malfunction of radiation monitor affects fuel handling

IQA Values: 2.6

Cog Level: Application

References: TS 3.3.7 and action
FR LP, Objective 13
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 066

Number:

Question: Given the following conditions:

- The plant is in Mode 6 with fuel movement in progress. (Core offload to SEP)
- The Manipulator Crane is over the core with a fuel assembly
- The Refueling Cavity level is 20 inches below the operating deck
- A report is received from the CV that the Refueling Cavity water level is decreasing
- The crew has entered AOP-020, Section 8, Loss of RRR-Vessel Read Off

Which one of the following describes the proper location for the fuel assembly in transit?

A. Its original core location

B. Its designated SFP location

C. Manipulator Crane Mast

D. North Refueling Cavity area away from the core

Answer: A. Its original core location

Justification: A- Correct

8- Incorrect. The assembly could be placed in the upender but SFP is not an option
C- Incorrect. Manipulator Crane mast is not an option
D- Incorrect. Decreasing level, assembly should not stay in refueling cavity

Tier/Group 1/3

IOCFRSS.41
41
IOCFRS5.43

8/NIM New

K/A #: 036AK2.0l Knowledge of the interrelations between a fuel handling accident and fliel handling equipment

K/A Values: 2.9

Cog Level: Memory

References: AOP-020, Section B, step S
AOP-020 LP, Objective 8
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 067

Number:

Question: Given the following conditions:

A reactor trip has occurred.

The crew has entered FRP-H.2, Response to Steam Generator Overpressure, based upon a

YELLOW condition on the Heat Sink Status Tree.

- 'A' SG pressure indicates 1150 psig
- 'B' and 'C' SO pressures indicate 1010 psig
- 'A' SO level is 65%
- APP-002-F7, INST AIR HDR LO PRESS, is lit
- Instrument Air Header Pressure is 30 psig

Which one of the following actions will be required to mitigate the SO Overpressure condition?

A. Initiate AEW flow

B. Locally operate 'A' SG PORV to dump steam

C. Go to FRP-H.3, Response to SO High Level, to reduce pressure by reducing SG level

D. Align Nitrogen to SO PORVs using AOP-0l7, Loss of Instrument Air, and attempt to dump steam

Answer: D. Align Nitrogen to SG PORVs using AOP-0 17, Loss of Instrument Air, and attempt to dump steam

Justification: A- Incorrect. Do not initiate FW or AFW flow with a high level present.

B- Incorrect. There is no guidance for local operation of PORVs in this procedure
C- Incorrect. Only go to FR-H.3 if level is greater than 84%
D- Correct. If Loss of Instrument Air is present, step 4 has the crew align Nitrogen..

Tier/Group 1/3

IOCFR5S.41
41
I OCFR5S.43
BINIM New

K/A #: E13EK1.3 Knowledge of operational implications of annunciators and condition indicating signals and remedial actions associated with SO Overpressure

K/A Values: 3.0

Cog Level: Comprehension

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

References: FRP-H.2, Step 4
FRP-H.2 LP, Objective S

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Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 068

Question: Which one of the following is true concerning depressurizing the RCS lAW EPP-15, Loss of Emergency Coolant Recirculation?

A. To minimize RCS leakage, depressurize the RCS until Pressurizer level is> 71% OR RCS Subcooling is between 350 F and 450 F

B. To increase SI Injection flow, depressurize the RCS until Pressurizer level is > 90% OR RCS Subcooling is between 250 F and 350 p

C. To ensure SI Accumulator injection, depressurize the RCS until Pressurizer level is >71% OR RCS Subcooling is between 350 Fand 450 F

D. To allow RHR to be placed in service, depressurize the RCS until Pressurizer level is > 90% OR RCS Subcooling is between 250 F and 350 F

Answer: A. To minimize RCS leakage, depressurize the RCS until Pressurizer level is>71% OR RCS Subcooling is between 350 F and 450 F

Justification: A- Correct.The depressurization is performed to decrease leakage, therefore decreasing makeup requirements.

B- Incorrect. SI injection flow may not increase because there may be no water source.
C- Incorrect. Setup for accumulator injection is performed later in the procedure after SO depressurization.
D- Incorrect. RHR will not be placed in service until after the cooldown and depressurization are performed, later in the procedure

Tier/Group 1/2

IOCFRSS.41
41
IOCFR55.43

BINIM Bank (One distractor modified) EPP-015-03-00l

'CIA #: El lEK3.2 Knowledge of the reasons for the following responses as they apply to the Loss of Emergency Coolant Recirculation: Normal, abnormal, and emergency procedures associated with Loss of Emergency Coolant Recirculation

'CIA Values: 3.5

Cog Level: Comprehension

References: EPY-OlS step 39 basis
EPP 015 LP objective 3
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 069

Question: Which one of the following describes two objectives of procedure EPP-015, Loss of Emergency Coolant Recirculation?

A. Maximize injection flow and initiate makeup to the RWST

B. Delay depletion of the RWST and stabilize RCS temperature

C. Restore Emergency Coolant recirculation capability and stabilize RCS temperature

D. Delay depletion of the RWST and restore Emergency Coolant recirculation capability

Answer: D. Delay depletion of the RWST and restore Emergency Coolant recirculation capability

Justification: A- rncorrect. SI is reduced to the minimllm required for heat removal.
B- Incorrect. Stabilizing RCS temperature is not an action or priority
C- Incorrect. Stabilizing RCS temperature is not an action or priority
D- Correct. The procedure has 3 objectives: Minimizes depletion of RWST, depressurize RCS to minimize break flow and cause accumulator injection, and continue affempts to restore recirculation capability

Tier~Group 1/ 2

IOCFR55.41
41
lOCFRS5.43
BINIM Bank (Modified distractors) EPP-015-01-002
IQA #: Eli Generic 2.4.18 Knowledge of specific bases for FOPs
K/A Values: 2.7
Cog Level: Memory

References: EPP-015 Basis
EPP-015 LP Objective I
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 070

Question: Given the following conditions:

- RCS pressure is 1000 psig and trending down
- SO 'A' level is 5% and trending down, pressure is 500 psig and trending down slowly
- SO CB¶ level is 7% and trending down, pressure is 480 psig and trending down slowly
- SO 'C' level is 3% and trending down, pressure is 490 psig and trending down slowly
- Total AFW flow is 140 GPM
- Containment pressure is 4 psig
- SPDS has been reset. The STA is monitoring CSF Status Trees

Which one of the following procedures will be entered under these conditions?

A. EPP-01 1, Faulted Steam Generator Isolation

B. FRP-H.l Response to Loss of Secondary Heat Sink

C. FRP-14.5, Response to Steam Generator Low Level

D. EPP-016, Uncontrolled Depressurization of All Steam Generators

Answer: B. FRP-R. I Response to Loss of Secondary Heat Sink

Justification: A- Incorrect. Not RED
B- Correct. Entry met for FRP-H. 1
C- Incorrect. Not RED
D- Incorrect. Not RED

Tier~Group1/ 2

I OCFR55.41
41
I OCFR55.43

B/N/M Bank (Minor Mod)

K/A #: £05 Generic 2.4.2 Knowledge of system setpoints, interlocks, and automatic actions associated with EOP entry conditions

K'A Values: 3.9

Cog Level: Comprehension

References: FRP-H. I Entry conditions
FRP-H.1 LP, Objective 2
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 071

Number:

Question: Given the following conditions:

A LOCA has occurred. The crew is performing the actions of PATH-i.

The following conditions exist:

- RCS Pressure is 500 psig
- RCS temperature is 4500F
- SO NR levels are Off-Scale Low
- SO Pressures are 650 psig and trending down
- AFW flow is 450 6PM
- Pressurizer level is Off-Scale Low
- Containment Pressure is 25 psig
- SPDS has been reset. The STA is monitoring CSF Status Trees

Which one of the following procedures will the crew perform next for this event?

A. Continue in PATH-i for the LOCA

B. FRP-J.1, Response to High Containment Pressure

C. FRP-H.1, Response to Loss ofSecondary Heat Sink

D. EPP-016, Uncontrolled Depressurization of all Steam Generators

Answer: B. FRP-i.1, Response to High Containment Pressure

Justification: A- Incorrect. Conditions met for transition. A LOCA is in progress and once the Ctmt pressure problem is addressed, PATH-i will be addressed.
B- Correct. 25 psig is a RED condition requiring entry to FRP-J. 1.

C- Incorrect. SO levels are low but AFW is available, so entry conditions will not be met
D- Incorrect. SOs are depressurizing because RCS pressure is dragging them down.
Tier/Group1/1

IOCFR55.41
41
IOCFR55.43

BINIM New

K'A #: EI4EA2.i Ability to determine or interpret the following as they apply to High Containment Pressure: Facility Conditions and selection of appropriate procedures during abnormal or emergency operations
K/A Values: 3.3

Cog Level: Comprehension

References: FRP-J.1 Entry conditions
FRP-J. I LP Objective 2
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 072
Number:

Question:
In procedure EPP-016, Uncontrolled Depressurization of All Steam Generators, the Operator is directed to establish feed flow to all three Steam Generators. What is the setpoint and basis for establishing flow in this range?
A. 80-90 gpm, maintain minimum feed flow to ensure CST inventory is maintained until MIR can be placed in service
B. 100-110 gpm, maintain a minimum of3OO gpm feed flow to ensure adequate heat sink is maintained
C. 80-90 gpm, establish a minimum verifiable flow to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase
D. 100-110 gpm, establish a minimum verifiable flow to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase
Answer: C. 80-90 gpm, establish a minimum verifiable flow to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase
Justification: A- Incorrect- 80-90 gpm is the correct feed flow; however basis incorrect
B- Incorrect - Feed flow range incorrect and basis incorrect
C- Correct.
D- Incorrect. Feed flow range incorrect, basis is correct
Tier/Group ill

I OCFRS5.41
41
IOCFRS5.43

BINIM New

K/A #: El2EK3.lknowledge of the reasons for the following responses as they apply to Uncontrolled Cooldown of All Steam generators: Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature, pressure, and reactivity _____ changes and operating limitations and reasons for these operating characteristics

KiAVatues: 3.5

Cog Level: Memory

References: EPP-016 step 9, page 17 of4l of basis
EPP-016 LP, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 073

Number:

Question: Given the following conditions:

- Model,100%RTP
- 'A' CCW Pump and Heat Exchanger are in service
- The crew is isolating Component Cooling Water to the Spent Fuel Pit for Heat Exchanger maintenance
- CCW flow on FI-613 indicates 2200 6PM and trending down
- CCW Pressure on PI-612 indicates 110 psig and trending up slowly
- The RO opens CC-749A, CCW from RHR MX 'A'

Which one of the following describes the function provided by opening CC-749A?

A. Ensures sufficient flow through a CCW pump to satisfy the minimum flow requirement

B. Ensures CCW flow limitations on the Non-Regenerative Heat Exchanger are not exceeded

C. Ensures CCW Heat Exchanger flow will remain below 2350 6PM to minimize damage from tube vibration

D. Reduce CCW system pressure to ensure design pressure of the RHR Heat Exchangers is not exceeded

Answer: A. Ensures sufficient flow through a CCW pump to satis~ the minimum flow requirement

Justification: A- Correct. CCW pumps are to be run continuously with >2200 gpm flow.
B- Incorrect. Flow limitation concern is for the CCW pump
C- Incorrect. The 2350 limit is for SFP MX
D- Incorrect. System is sized so as not to exceed design pressures of HX. With system aligned for operation, pump discharge will not be high enough to overpressurize MX

Tier/Group2/3

I0CFRSS.41
41
IOCFRS5.43
BINIM New

K/A #: 008A1 .01 Ability to predict and/or monitor changes in parameters to prevent exceeding design limits associated with operating the CCWS controls including: CCW flow rate

K/A Values: 2.8

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Cog Level: Memory

References: OP-306, Section 8.4.3
CCW LP Objective S

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

¾-

Question Number: RO 074

Question: Given the following conditions:

- A rapid load reduction from 100% to 70% power was performed.
- Control Bank D rods were inserted to 180 steps.
- One Control Bank D rod did not move and is currently at 214 steps.

Which one of the following describes a concern associated with the rod misalignment?

A. Xenon buildup in the area of the stuck rod may immediately affect core power distribution

B. Xenon burnout in the area of the stuck rod may immediately affect core power distribution

C. Xenon buildup in the area of the inserted rods may affect core power distribution if left uncorrected

D. Xenon burnout in the area of the inserted rods may affect core power distribution if left uncorrected

Answer: C. Xenon buildup in the area of the inserted rods may affect core power distribution if left uncorrected

Justification: A- Incorrect. Xenon will not immediately affect core power distribution. The effects of xenon will be felt an hour after the transient.
B- Incorrect. Burnout at the affected location should not be occurring. Not immediately either
C- Correct. When power is reduced locally, as in the case of inserted rods, xenon will build in for several hours, further depressing flux in that area. In the area of the stuck rod, xenon will not be building in because flux stayed the same or increased (relative to inserted rods)
D- Incorrect. Xenon will not burnout in the area of the inserted rods

Tier/Group 1/1

1OCFRSS.41

41

IOCFRS5.43

New

K/A #: OOSAKI .03 Knowledge of operational implications of xenon transient as related to stuck/inoperable rod

K/A Values: 3.2

Cog Level: Comprehension

References: TS 3.1.4 bases
AOP-001 bases
AOP-001 LP objective 6
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Lesson Plan Reactor Theory Chapter 5, Control Rods
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 075

Number:

Question: A leak in the Service Water system has occurred.

The Aux Building North Header has been isolated due to a large leak downstream of the

Service Water Booster Pump North Header supply valve, SW-25.
Which one of the following describes the impact on cooling water supplied to the Containment Air Recirculation Fans, HVH-1-4?

A. Service Water Booster Pump 'A' can supply cooling from the South Header only

B. Service Water Booster Pumps 'A' and 'B' can supply cooling from the South Header only

C. Service Water Booster Pump 'A' can supply cooling from the North and South Headers

D. Service Water Booster Pumps 'A' and 'B' can supply cooling from the North and South Headers

___ Answer: A. Service Water Booster Pump 'A' can supply cooling from the South Header only

Justification: A- Correct because SWBP A takes suction from South Reader
B- Incorrect because leak location precludes cross-connect of headers Leak would reinitiate upon cross-connect
C- Incorrect because leak location precludes cross-connect of headers, and the North header is isolated upstream of the cross-connect
D- Incorrect because a leak on Pump B suction downstream of isolation will preclude use of

ihe pump
Tier/Group2/3

IOCFR5S.41
41
IOCFR55.43

BINIM New

K/A #: 076K3.03 Knowledge of the effect that a loss or malfunction of the Service Water System will have on RB (Containment) Closed Cooling

K/A Values: 3.5

Cog Level: Memory

References: SW SD Figure 6
AOP-022, Attachment 6
AOP-022 LP, objective S
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 076

Question: The Control Room has been evacuated.

Which one of the following describes the location and conditions required for monitoring SO

Pressure?

A. In the AFW Pump Room; readings may be obtained immediately

B. At the Secondary Control Panel; readings may be obtained immediately

C. In the AFW Pump Room; only after the DS Diesel is operating

D. At the Secondary Control Panel; only after the DS Diesel is operating

Answer: B. At the Secondary Control Panel; readings may be obtained immediately

Justification: A- Incorrect because The AFW pump room is a likely location, but no SO pressure indication available

B- Correct. SO Pressure is read at SCP. DS Diesel required for other indications, but SO pressure is mechanical
C- Incorrect because AFW pump room does not have SO Pressure indication and the DS Diesel is not required
D- Incorrect because The DS Diesel is not required for SO Pressure indication

Tier/Group 2/2

IOCFR55.41
41
IOCFRSS.43

B/N/M Bank

IQA #: 016K4.01 Knowledge of NNIS design features or interlocks which provide for the following: Reading of NNIS values outside of The control room

K/A Values: 2.8

Cog Level: Memory

References: DSP-002 Background document page 13 of 27
DSP-002 LP objective 3
R.B. Robinson
Site Specific Written NRC Examination

Reactor Operator
Final Worksheet

Question Number: RO 077

Question: A reactor trip has occurred.

The crew is performing actions contained in EPP-4, Reactor Trip Response
Group Demand Counters on CR 'D' indicate 218 steps.

Which one of the following Rod Position Indications is used to detemine that a boration is

necessary lAW EPP-4?

A. All Rod Bottom LEDs illuminated with IRPIs 0-5 inches

B. Two Rod Bottom LEDs extinguished with associated IRPI indicators at 50 inches

C. All RTGB IRPI indicators reading less than 2.5 inches

D. One RTGB IRPI indicator reading 50 inches withdrawn

Answer: B. Two Rod Bottom LEDs extinguished with associated IRPI indicators at 50 inches

Justification: A. Incorrect - All rods fully inserted based on Rod Bottom LEDs and IRPIs 0-5 inches, boration not required

B. Correct - Two rod bottom LEDs extinguished with the associated IRPI indicators at 50 inches would indicate two rods not fully inserted: therefore, boration required lAW EPP-4, step 12

C. Incorrect- RTGB IRPIs plus Rod Bottom LEDs are used to determine if all rods fully inserted; not just IRPI alone, must use redundant indications

D. Incorrect - Must use IPPI and Rod Bottom LEDs, may be an IRPI malfunction

Tier/Group 2/2

IOCFR55.41
41
I OCFR5S.43

B/N/M New

K/A #: 014A2.05 Ability to predict the impacts of a reactor trip on the RPI system, and based on those predictions, use procedures to correct, control, or mitigate the effects of the malfunction on

operations

K/A Values: 3.9

Cog Level: Memory

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

References: EPP-4, step 12 and basis
EPP-4 LP, Objective 3

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 078

Question: Reactor Protection System Logic Channel I (Train 'A') is undergoing trip testing.

Which one of the following describes how a spurious reactor trip is prevented during the breaker testing?

A. Reactor Trip Bypass Breaker 'A' is racked in and closed. It will open on a reactor trip signal from Train 'A'
B. Reactor Trip Bypass Breaker 'A' is racked in and closed. It will open on a reactor trip signal from Train 'B'
C. Reactor Trip Bypass Breaker 'B' is racked in and closed. It will open on a reactor trip signal from Train 'A'
D. Reactor Trip Bypass Breaker 'B' is racked in and closed. It will open on a reactor trip signal from Train 'B'

Answer: B. Reactor Trip Bypass Breaker 'B' is racked in and closed. It will open on a reactor trip signal from Train 'A'

Justification: A- Incorrect because the RTBB for Train A gets its trip signal from Train B
B- Correct
C- Wrong Bypass Breaker. Wrong Train.
D- Wrong breaker. Right Train. Function of breaker is correct. Just not answer to question posed

Tier/Group 2/2
IOCFR55.41
41
IOCFRSS.43
B/N/M New

K/A #: 012K4.05 Knowledge of design features and/or interlocks which provide for the following: _____ Spurious Trip Protection

K/A Values: 2.7

Cog Level: Memory

References: RPS 50011, page 6 of 32
RPS LP Objective 5
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 079

Question: A Large Break LOCA has occurred. The crew is attempting to transfer to Cold Leg Recirculation lAW EPP-9, Transfer to Cold Leg Recirculation.

- APP-002-B3, RWST LO-LO LVL is received.
- The RO verifies that RWST level indicates 8%

Which one of the following describes all equipment that has been or will be secured to prevent loss of suction?

A. '(HR pumps only

B. '(HR and SI pumps only

C. '(HR pumps, SI pumps, and CV Spray pumps only

D. '(HR pumps, SI pumps, CV Spray pumps, and Charging pumps

Answer: D. '(HR pumps, SI pumps, CV Spray pumps, and Charging pumps

Justification: A- Incorrect because it does not include SI, CV Spray, or Charging
B- Incorrect because it does not include CV Spray or Charging
C- Incorrect because it does not include Charging
V- Correct

Tier/Group 2/2

IOCFR5S.41
41

IOCFR55.43

BINIM New

K/A #: 006K6.0l Knowledge of the effect that a loss or malfunction of borated water sources will have on ECCS

K/A Values: 3.4

Cog Level: Memory

References: EPP-015, step 47
EPP-9, steps 5 and 10
APP-002-B3
_____ EPP-9 LF Objective 8
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 080

Number:

Question: Given the following conditions:

The plant is operating in Mode 1, 100% RTP.

Which one of the following describes the potential effect of placing Instrument Bus 3 on its alternate power supply, MCC-8?

A. Indication is momentarily lost, AUTO controllers output fails offscale HIGH

B. Indication is momentarily lost, AUTO controllers revert to MANUAL because the transfer is a 'break before make'

C. Indication is not lost, AUTO controllers output fails offscale LOW

D. Indication is not lost, AUTO controllers remain in AUTO because the transfer is a 'make before break'

Answer: B. Indication is momentarily lost, AUTO controllers revert to MANUAL because the transfer is a 'break before make'

Justification: A- Incorrect. AUTO controllers do not fail offscale HIGH
B- Correct. Indication would be lost because the transfer is a 'break before make. When the controllers lose power, they transfer to MANUAL
C- Incorrect. Indication is momentarily lost, AUTO controllers do not fail offscale LOW
D- Incorrect because indication will be lost when the inverter supply to 1B3 is opened. Not Cmake before break'

Tier/Group2/2

IOCFRS5.41
41
IOCFRS5.43
BINIM New

K/A #: 062A1 .03 Ability to predict and or monitor changes in parameters to prevent exceeding design limits associated with operating the AC distribution controls including: Effect on instrumentation and controls of switching power supplies

K/A Values: 2.5

Cog Level: Comprehension

References: 480/120 V electrical SD016, page 14 of 32 and figure 3
VAC LP Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 081
Number:

Question: Given the following conditions:

A LOCA has occurred. Due to Safety Injection System failures, the following indications

exist:
• RCS pressure indicates 660 psig and stable
• Core Exit TICs indicate 7200F and rising
• RVLIS Full Range indication is 41% and lowering
• All RCPs are secured
• SPDS has been reset. The STA is monitoring CSF Status Trees.

Which one of the following describes the condition of the reactor and the action required?

A. Vessel water level is 3.5 feet below the top of the active fuel. Enter FRP-C.2, Response to Degraded Core Cooling

B. Vessel water level is 3.5 feet below the top ofthe active fuel. Enter FRP-C.1, Response to Inadequate Core Cooling

C. Vessel water level is 3.5 feet above the bottom of the active fuel. Enter FRP-C.2,
¾ Response to Degraded Core Cooling

D. Vessel water level is 3.5 feet above the bottom of the active fuel. Enter FRP-C.1, Response to Inadequate Core Cooling

Answer: D. Vessel water level is 3.5 feet above the bottom of the active fuel. Enter FRP-C.l, Response to Inadequate Core Cooling

Justification: A- Incorrect because level is incorrect and procedure entry is incorrect
B- Incorrect because level is incorrect
C- Incorrect because procedure entry is incorrect
D- Correct because fuel uncovery is occurring and entry conditions are met for FRP-C. I

Tier/Group 2/1

IOCFR5S.41
41
I OCFR5S.43

BINIM New

K/A #: 017A2.02 Ability to predict the impacts of Core damage on the ICCM and use procedures to correct, control, or mitigate the consequences of core damage

K/A Values: 3.6

Cog Level: Memory

References: CSF-2, Core Cooling CSFST
FRP-C.2 LP Objective 2
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 082

Number:

Question: Given the following conditions:

- A Loss of all AC has occurred.
- The crew is performing actions contained in EPP-1, Loss of All AC Power.
- Power has NOT been restored to any AC bus.

Which one of the following describes the combination of valves that are expected to fail OPEN?

A. CVC-204A and B, Letdown Line Isolations, and HCV-12l, Charging Flow Control

B. RVC-121, Charging Flow Control, and CVC-303A, RCP Seal Leakoff Isolation
C. LCV-l lSB, Emergency Makeup to Charging Pump Suction, and FCV-1 13A, Boric Acid to Blender Isolation

0. FCV-l 13A, Boric Acid to Blender Isolation, and CVC-307, Primary Seal Bypass Jsolation

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Answer: B. HVC-121, Charging Flow Control, and CVC-303A, RCP Seal Leakoff Isolation

Justification: A- Incorrect because CVC-204A/B fail closed
B- Correct
C- Incorrect because LCV-l 15B fails closed
0- Incorrect because CVC-307 fails closed
All are valves potentially affecting reactivity or inventory, and all are plausible due to the nature of their function

Tier/Group 1/1

lOCFRSS.41
41
IOCFR55.43
B/N/M New

K/A #: OSSEA2.01 Ability to determine or interpret the following as they apply to a Station Blackout: Existing valve position on Loss of Instrument Air

Ic/AValues: 3.4

Cog Level: Memory

References: AOP-017, Attachment I
Air LP Objective 5
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

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Question Number: RO 083

Question: A Reactor Trip and Safety Injection have occurred.

The following alarms were received in the Control Room:

- APP-004-AI, S/GA HI STM LINE HI AP SFGRD/TRIP
- APP-004-AS, S/GA LO LVL & STM> FWF TRIP
- APP-006-A2, SIG A STM> FW FLOW
- APP-006-ES, STM LINE LO PRESS

The crew has completed Supplement 0, Steam Generator Isolation.

Which one of the following describes the Main Steam System component(s) controlling RCS

Heat Removal?

A. Condenser Steam Dumps from 'A', 'B', and 'C' SGs

B. 'A','B', and'C'SGPORVs

C. 'B' and 'C' SG Main Steam Safety Valves

D. Condenser Steam Dumps from 'B' and 'C' SG

Answer: D. Condenser Steam Dumps from 'B' and 'C' SG

Justification: A- Incorrect. Steam Dump not available from A SO. A SIG isolated per Supplement "G"

B- Incorrect. Steam Dump available from condenser

C- Incorrect. Steam Dump available from condenser
D- Correct
Tier/Group I/I

IOCFR55.41
41
IOCFR55.43

B/N/M New

'CIA #: 040/E12AKl.01 Knowledge of the interrelations between the Steam Line Rupture and the following: Valves

IC/A Values: 2.6

Cog Level: Comprehension

References: Supplement 0, SD-03 I pg 18
No LP for Supplements found
R.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question RO 084

Number:

Question: The plant is in Mode 1, 100% RTP.

During recovery from a Loss of Service Water, the crew has entered AOP-0 14, Component Cooling Water System Malfunction, due to increasing Component Cooling Water temperatures.

- The North Service Water Header in the Auxiliary Building is isolated.
- The crew has restored Service Water pressure to normal.
- CCW Heat Exchanger outlet temperature is 1090F and increasing slowly.
- SFP temperature is 950F

Which one of the following describes appropriate actions to reduce heat load on the Component Cooling Water System?

A. Throttle OPEN CC-775, CC FROM SFP HX BUTTERFLY, to raise SFP temperature to llS0Fto 1200F

B. Secure Normal Letdown and place Excess Letdown in service

C. Verify both CCW Heat Exchangers in service with CCW Heat Exchanger Return valves, SW-739 & SW-740, at POSITION 2

D. Throttle CLOSED CC-775, CC FROM SFP HX BUTTERFLY, to raise SFP temperature to 1 150F to 1200F

Answer: D. Throttle CLOSED CC-775, CC FROM SFP RX BUTTERFLY, to raise SFP temperature to I 150F to 1200F

Sustification: A- Incorrect - Opening CC-775 will increase the heat load on CCW System
B- Incorrect - lAW AOP-014 Section D, step 6, this is not an appropriate action
C- Incorrect- This action may decrease CCW temperature but the action does not affect CCW heat load as the question specifically asks
D- Correct - Throttling closed on CC-775 will reduce the heat load on the CCW System and is an appropriate action lAW AOP-014, Section D, step 6

Tier/Group1/1

IOCFR5S.41
41
IOCFRSS.43
B/N/M New

K/A #: 062AA1 .06 Ability to operate and/or monitor the following as they apply to Loss of Nuclear Service Water: Control of flow rates to components cooled by CCWS

K/A Values: 2.9

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Reactor Operator
Final Worksheet

Cog Level: Comprehension

References: AOP-014, Section D
AOP-014 LP, ObjectiveS

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Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 085

Question: A transient has occurred resulting in the following conditions:

- Reactor Trip and Safety Injection
- RCS Pressure is 1050 psig and decreasing
- RCS temperature is 5450F
- Pressurizer Level is 78% and increasing
- RCPs are tripped

The crew is performing PATH-i when the following plant conditions develop:

- RCS Pressure is 1200 psig and increasing slowly
- RCS temperature is 5450F
- Pressurizer level is 32% and decreasing

Which one of the following describes the likely cause of the changing conditions?

A. The size of the RCS leak has increased

B. A Faulted Steam Generator has boiled dry

C. A Pressurizer Safety Valve or PORV has reseated

D. The Turbine failed to trip and the MSIVs were closed

Answer: C. A Pressurizer Safety Valve or PORV has reseated

Justification: A- Incorrect because RCS pressure would be dropping if the leak had increased
B- Incorrect because pressurizer level would act in the opposite way if the faulted SO boiled dry
C- Correct
D- If the turbine failed to trip the pressurizer level would act in the opposite way

Tier/Group1/ 2

IOCFR55.41
41
1 OCFR5S.43

BIN/M New

K/A #: 008AA1 .07 Ability to operate or monitor the following as they apply to the Pressurizer Vapor Space Accident: Reseating of code safety and PORV

K/A Values: 4.0

Cog Level: Comprehension

References: Lesson Plan Chapter 4 - Thermodynamic Processes

H.B. Robinson

Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 086

Question: One channel of Power Range NIS is removed from service for testing and all procedural requirements are satisfied.

Which one of the following reactor trip coincidences is correct for the PR NIS while this channel is being tested?

A. 2outof3

B. 2outof4

C. loutof3

D. loutof4

Answer: C. I out of3

Justification: A- Incorrect - I out of3
B- Incorrect - 2 out of4 is the normal reactor trip coincidence when all channels operable
C- Correct- I out of 3
D- Incorrect- I out of3

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Tier~Uroup 1/ 2

IOCFR5S.41
41
10CFR55~43

BINIM Bank

K/A #: 007EK2.03 Knowledge of the interrelations between a reactor trip and the following: Reactor Trip Status Panel

K/A Values: 3.5

Cog Level: Memory

References: RPS SDOI 1, page 6 of32
RPS LP Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 087

Number:

Question: Given the following conditions:

- A SBLOCA has occurred
- The crew is perfonning actions contained in PATH-I
- RCS Subcooling has been lost
- The RO is unable to start any SI pumps
- All CSFSTs are YELLOW or GREEN

Which one of the following describes the required operation of the RCPs and the reason for the action?

A. All RCPs must be tripped to prevent core uncovery and an Inadequate Core Cooling condition due to the mass being pumped out of the RCS break

B. All RCPs must be tripped because the two phase flow is creating an artificially high

vessel level indication and core unccovery will eventually occur if RCPs are left running

C. Operating RCPs must remain in operation because there is no other source of core cooling

D. One RCP must immediately be stopped to save for future use in the Functional Recovery Procedures

Answer: C. Operating RCPs must remain in operation because there is no other source of core cooling

Justification: A- Incorrect because SI pumps must be running to trip RCPs.
B- Incorrect because SI pumps must be operating to trip RCPs
C- Correct
D- Incorrect although it is an action in FRP-C.2 to save an RCP for fliture use

Tier/Group 1/ 2

IOCFR55.41
41
lOCFRSS.43
BThJI'M New

IC/A #: 009EK3.1 I Knowledge of the reasons for the following responses as they apply to SBLOCA: Dangers associated with Inadequate Core Cooling

IC/A Values: 4.4

Cog Level: Comprehension

References: PATH-I
PATH-I LP, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 088

Number:

Question: Given the following conditions:

- Plant is in Mode S
- REIR 'A' in service providing core cooling with discharge pressure at 140 psig and stable
- The reactor vessel head is on
- RCS level is minus 14 inches and stable

The crew is responding to an unexpected rise in RCS temperature lAW AOP-020, Loss of Residual Heat Removal (Shutdown Cooling)

Which one of the following actions will be required during this event?

A. Stop any mnning RHR pumps

B. Reduce RHRflowto lSOOGPM

C. Verify at least one Component Cooling Water pump running

D. Throttle open FCV-605, RHR Heat Exchanger Bypass valve, to stabilize RCS temperature

Answer: C. Verify at least one Component Cooling Water pump mnning

Justification: A- Incorrect because it is action taken on vessel level or on persistent cavitation
B- Incorrect because it is action for cavitation
C- Correct
D- Incorrect because throttling open the bypass will not stabilize temperature, it will actually increase heatup rate because it will bypass the heat exchanger

Tier/Group1/ 2

IOCFRSSAI
41

IOCFR55.43
BINIM New

K/A #: O2SAAI.04 Ability to operate or monitor the following as they apply to Loss of Residual Heat Removal: Closed Cooling Water

K/A Values: 2.8

Cog Level: Comprehension

References: AOP-020, Section E, step 20
_____ AOP-020 LP objective 8

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 089

Number:

Question: Given the following conditions:

- A Steam Generator Tube Leak exists on 'A' SG
- The crew is performing AOP-035, Steam Generator Tube Leak

While preparing to cool down to Cold Shutdown, 'A' SG remains isolated, and 'B' and 'C' Steam Generators are aligned to the Main Condenser.

Which one of the following describes the reason that 'A' SG is cooled down using the 'Backfill' method instead of using the Main Condenser?

A. Backfill requires no liquid radwaste processing

B. Backfill provides a faster method of cooling down a ruptured SG

C. Backfill conserves feedwater compared to cooldown using Main Condenser

D. Backfill minimizes the spread of contamination and minimizes radiological release

¾

Answer: D. Backfill minimizes the spread of contamination and minimizes radiological release

Justification: A- Incorrect because backfill will require more radwaste processing because secondary system water will be processed also
B- Incorrect because steam dump is the fastest method
C- Main Condenser is closed cycle which conserves feedwater as compared to Backfill
D- Correct. Backfill leaves the mptured SO isolated, which will minim i2e the spread of contamination

Tier/Group 1/ 2

IOCFRSS.41
41
I OCFR5S.43
B/N/M New

K/A #: 037AA2.15 Ability to determine or interpret magnitude of radioactive release if cooldown must be completed using steam dump or atmospheric reliefs

K/A Values: 3.4

Cog Level: Memory

References: AOP-035 Background
EPP-12 Background
AOP-035 LP Objective 3

H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 090

Number:

Question: Given the following conditions:

- FRP-H.2, Steam Generator Overpressure, is in effect
- STA is monitoring CSFSTs
- The CR55 directs the BOP to check the affected SG water level <84%

Which one of the following describes the reason for this level check?

A. Preparation for resetting the Feedwater Isolation signal

B. The overpressure condition could be caused by the density effects on SO water level indication

C. To determine whether FRP-H.3, Response to SO High Level, is the appropriate guideline for the event

D. Ensures adequate SO inventory for pressure reduction by dumping steam through the

SO PORV

Answer: C. To determine whether FRP-H.3, Response to SG High Level is the appropriate guideline for the event

Justification: A- For an overfill/overpressure, feedwater isolation does not need to be reset
B- High level may be a contributor to the overpressure condition, but not for the reason stated
C- Correct
D- There is plenty of SG inventory at levels far below 84%, especially if feedwater capacity is normal

Tier/Group 1/3
1OCFRS5.41
4'
1 OCFRSS.43

B~/M Bank FRP-H.2-3-1(Editorial modification)

K/A #: EI3EK3.4 Knowledge of the reasons for the following as they apply to the Steam generator Overpressure: RO or SRO flinction within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facility license and amendments aren't violated

K/A Values: 3.1

Cog Level: Memory

References: FRP-H.2 Basis
FRP-H.2 LP Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 091

Number:

Question: The plant is at 20% RTP

The crew is raising load lAW GP-005, Power Operation.

Which one of the following describes how Tave is maintained equal to Tref in accordance with approved plant procedures?

A. Tave is being maintained equal to Tref using either manual rod withdrawal or RCS boron dilution during the load increase

B. RCS boron concentration is set at its 100% power value prior to the load increase.

Tave is maintained equal to Tref using rod withdrawal only

C. Rods are manually withdrawn above the 100% power insertion limit prior to the load increase. Tave is maintained equal to Tref during the load increase using boron dilution only

D. Load is raised with Rod Control automatically maintaining Tave equal to Tref. RCS Boron concentration is adjusted as necessary to ensure rods stay within the Insertion Limits

Answer: A. Tave is being maintained equal to Tref using either manual rod withdrawal or RCS boron dilution during the load increase

Justification: A- Correct
B- Incorrect because if boron dilution was performed to the 100% value, rods would most likely be below the insertion limits
C- Incorrect because the procedure just has the crew use a combination as necessary. It is easier to control Tave using manual rod control than it is intermittently diluting
D- Incorrect because manual rod control is used

Tier/Group2/3

1OCFRSS.41
41
I OCFR55.43

B/N/M New

K/A #: 045K5.23 Knowledge of the operational implications of the following concepts as they apply to the MT/U system: Relationship between rod control and RCS boron concentration during TO load increase

K/A Values: 2.7

Cog Level: Memory

References: GP-005
GP-005 LP, Objective 7
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 092

Question: Which one of the following explains the reason for closing the seal return valve after securing a Reactor Coolant Pump with a high #1 Seal Leakoff flow?

A. Establish a boundary at the #2 seal

B. Prevent overflowing the RCP standpipe

C. Minimize heat load on seal return heat exchanger

D. Prevent flow damage to the Thermal Barrier Heat Exchanger

Answer: A. Establish a boundary at the #2 seal

Justification: A- Correct. Seal return valve is closed to minimize inventory loss & establish a boundary at the #2 seal
B- Incorrect. Standpipe should not overflow unless there is leakage past #2 seal
C- Incorrect. Even a high seal flow would not be above the capacity of the Seal Return MX
D- Incorrect. TBRX should not be affected unless it is leaking

Tier/Group 1,1

IOCFRS5.41
41
lOCFRSS.43

B/N/M Bank

K/A #: 015/017A}C2.07 Knowledge of the interrelations between the RCP malfunction and RCP seals

K/A Values: 2.9

Cog Level: Memory

References: AOP-Ol 8 Basis
AOP-0l 8LP, Objective 3
H.B. Robinson
Site Specific Written NRC Bxarnination
Reactor Operator
Final Worksheet

Question RO 093

Number:

Question: Given the following conditions:

- The plant is in Mode 1, 100% RTP
- A release of Waste Condensate Tank (WCT) 'A' is in progress
- Annunciator APP-036, RAD MONITOR TROUBLE, is received
- The flOP Operator reports the PAIL light for R- 18, Liquid Waste Disposal Monitor, is ON

Which one of the following describes the status of the Liquid Waste Release Isolation, RCV-018?

A. RCV-018 will not automatically close. The release must be stopped manually

B. RCV-018 will automatically close when the monitor FAIL light is illuminated

C. RCV-0l8 is not immediately affected and will close if high radiation is sensed by R-lS

D. Automatic operation of RCV-0 18 is defeated, but the release may continue unless an actual High Radiation condition exists

Answer: A RCV-0l8 will not automatically close. The release must be stopped manually

Justification: A- Correct. FAIL means loss of power and/or loss of indication
B- Incorrect because the valve will not close. RCV-14C will close on a FAIL, however
C- Incorrect because high radiation cannot be sensed by R- 18 if there is a loss of indication. The candidate would have to believe the FAIL is for the control room meter rather than the whole channel
D- Incorrect. The release may not continue if the radiation level in the line is unknown

Tier/Group 2/2

IOCPRSS.41
41
IOCFRSS.43

B/N/M Bank (Distractors modified to RO level)

IC/A #: 073A1 .01 Ability to predict and/or monitor changes in parameters to prevent exceeding design limits associated with operating the PRM controls including: Radiation Levels

IC/A Values: 3.2

Cog Level: Memory

References: APP-036 E7
RM LP Objective 9
H.B. Robinson
Site Specific Wriffen NRC Examination
Reactor Operator
Final Worksheet

Question RO 094

Number:

Question: Given the following plant conditions:

A LOCA has occurred
The crew is perfonning actions of PATH-I
SPDS is reset and the STA is monitoring CSFSTs
CSFSTs indicate the following:
Subcriticality GREEN
Core Cooling YELLOW
Heat SinkYELLOW
IntegrityGREEN
Containment ORANGE
InventoryYELLOW

which one of the following actions will be taken?

A. Continue with PATR-I.

B. Enter FRP-C.3, Response to Saturated Core Cooling

C. Enter FRP-H.2, Response to Steam Generator Overpressure

D. Enter FRP-J.1, Response to High Containment Pressure

Answer: D. Enter FRP-I.I, Response to High Containment Pressure

Justification: A- Incorrect - Highest priority CSFST is ORANGE on Containment
B- Incorrect -Highest priority CSFST is ORANGE on Containment
C- Incorrect- Highest priority CSFST is ORANGE on Containment
D- Correct.

Tier/Group I/i

IOCFR55.4I
41
I OCFR55.43

B/N/M New

K/A #: 069AK3.Ol Knowledge of the reasons for the following responses as they apply to the Loss of Containment Integrity. Guidance contained in EOPs for the loss of containment integrity

K'A Values: 3.8

Cog Level: Comprehension

References: OMM-022 FRP guidance
CSFST J.I entry conditions
FRP-J. I LP Objective 2
R.B. Robinson
Site Specific Written NRC Exarnination
Reactor Operator
Final Worksheet

Question RO 095

Number:

Question: Which one of the following correctly describes the applicability of EPP foldouts?
Each foldout is applicable...

A. only during implementation of the associated Er'?.

B. during implementation of the associated EPP and YELLOW path FRPs.

C. during implementation of the associated EPP, YELLOW and ORANGE path FRPs.

D. during implementation of the associated Er'? and YELLOW, ORANGE, and RED FRPs until directed to refer to a different foldout or discontinue use.

Answer: B. during implementation of the associated Er'? and YELLOW path FRPs.

Justification: A-Incorrect. When an EP? is in effect, the foldout remains in effect even when the crew is

performing action lAW a YELLOW path FR?

B- Correct
C- Incorrect. Foldout pages do not apply during orange path
D- Incorrect. Foldout pages do not apply during red path or orange path

Tier/Group 3
IOCFR55AI 41
IOCFR55.43
B/N/M New
IQA #: 2.4.14 Knowledge of general guidelines for EQ? flowchart use
K/A Values: 3.0
Cog Level: Memory

References: OMM-22 page 13 of 50, section 8.2.4
LP OMM-20 R4, Objective 9
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 096

Question: In accordance with OP-Olo, Refueling, which one of the following describes the MINIMUM requirement for moving fuel between the Refueling Cavity and SFP?

A. A Fuel Handling licensed operator must be present on the refueling floor. A licensed SRO must be present in the SFP.

B. A licensed SRO must be present on the refueling floor. A Fuel Handling licensed operator must be present in the 5FF.

C. A licensed SRO must be present on the refueling floor. An STA or Reactor Engineering must be present at the SFP.

D. Reactor Engineering must be present on the refueling floor. A Fuel Handling licensed operator must be present in the SFP.

Answer: B. A licensed SRO must be present on the refueling floor. A Fuel Handling licensed operator must be present in the SFP

Justification: A- Incorrect. Opposite of requirement
B- Correct. An SRO must be present for refueling activities on the refueling floor and a FM licensed operator must be in the Spent Fuel Pool.
C- Incorrect. The procedure does not require STA or RE support, although they would most likely be stationed in the CV and/or 5FF at some point in the fuel transfer process
D- Incorrect. The procedure does not require STA or RE support, although they would most likely be stationed in the CV and/or SFP at some point in the fuel transfer process

Tier/Group3

lOCFR55.41
41
IOCFR55.43
BCN/M New
K/A #: 2.2.26 Knowledge of Refueling administrative requirements
K/A Values: 2.5
Cog Level: Memory

References: OP-Olo, Refueling, Precautions 5.8-5.10
LP GP-Ol0, Objective 3
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question RO 097

Number:

Question: Given the following conditions:

- Unit 2 is in Hot Shutdown
- All electrical busses in normal alignment
- The key operated inhibit switch for Zone 24 (Electrical Penetration Area) on Fire Detection and Alarrn Panel A2 (FDAP-A2) is placed in the INHIBIT mode

Which one of the following describes the fire detection and actuation capabilities of Zone 24 white it is in the INHIBIT mode?

A. Fire detection is still functional
Automatic actuation is disabled
Local Manual actuation is still functional

B. Fire detection is disabled
Automatic actuation is disabled
Local Manual actuation is disabled

C. Fire detection is disabled
Automatic actuation is disabled
____ Local Manual actuation is still functional

D. Fire detection is still functional
Automatic actuation is still functional
Local Manual actuation is still functional

Answer: A. Fire detection is still functional
Automatic actuation is disabled
Local Manual actuation is still lunctional

Justification: A- Correct. Inhibit is automatic actuation only. The detectors and actuators remain functional
B- Incorrect. Detection and local manual actuation are not disabled
C- Incorrect. Detection is not disabled
D- Incorrect. Automatic actuation is not functional

Tier/Group 2/2

IOCFR5S.41
41
IOCFRSS.43
B/N/M Bank
K/A #: 086A3.03 Operate or monitor actuation of fire detection
KiAValues: 2.9
Cog Level: Memory
11.13. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

References: SD 045, EDAS, section 6.2.4, page 26 of 47
APP-044-BSO
LP EDAS, Objective S
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet

Question Number: RO 098

Question: Which one of the following provides the location and function of the 'CRARGER IN SERVICE' switch in the 'A' 125 VDC electrical system?

It is located on battery charger:

A. 'A' and places the selected battery charger in service

B. 'A-I' and places the selected battery charger in service

C. 'A' and places the selected battery charger alarms in service

D. 'A-I' and places the selected battery charger alarms in service

Answer: D. 'A-i' and places the selected battery charger alarms in service

Justification: A- Incorrect. Provides wrong location and function.
B- Incorrect. Provides wrong function

C- Incorrect. Provides wrong location
D- Correct.
Tier/Group2/2

I OCFR5S.41
41
IOCFR55.43

B/N/M Bank

K/A #: 063K103 Physical connections and/or cause-effect relationship between DC Bus, battery and charger

K/A Values: 2.9

Cog Level: Memory

References: SD-038, Page 9, section 4.1
LP DC, Objective 5
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question Number: RO 099

Question: Which one of the following describes the control power supply for Reactor Trip Breaker 'B' and Reactor Trip Bypass Breaker 'B'?

	Reactor Trip Breaker 'B'	Reactor Trip Bypass Breaker 'B'
A.	'A' 125 VDC Dist. Panel	'A' 125 VDC Dist. Panel
B.	'A' 125 VDC Dist. Panel	'B' 125 VDC Dist. Panel
C.	'B' 125 VDC Dist. Panel	'A' 125 VDC Dist. Panel
D.	'B' 125 VDC Dist. Panel	'B' 125 VDC Dist. Panel

Answer: C. 'B' 125 VDC Dist. Panel 'A' 125 VDC Dist. Panel

Justification: A- Incorrect. Wrong Supply to RTB
B- Incorrect. Wrong supply to both breakers
C- Correct.
D- Incorrect. Wrong supply to RTBB
Tier/Group 2/2

IOCFR55.41
41
1OCFRS5.43

BINIM Bank (INPO - Robinson Exam 8/24/96)

K/A #: 012}C201 Knowledge of Power supplies to channelslcomponents/interconnections

K/A Values: 3.3

Cog Level: Memory

References: RPS SD section 3.3, page 11 of32
RPS LP Objective 6
H.B. Robinson
Site Specific Written NRC Examination
Reactor Operator
Final Worksheet
Question Number: RO 100

Question: Which one of the following actions wilt occur if a Control Room Ventilation Isolation is initiated by a High Radiation signal on Control Room Area Monitor, R- 1?

A. Exhaust fan HVE-16 starts

B. Recirculation fan HVE-19A starts

C. Ventilation intake damper opens

D. Filter Bypass damper opens

Answer: B. Recirculation fan HVE-19A starts

Justification: A- Incorrect. Fan stops
B- Correct.
C- Incorrect. Damper closes
D- Incorrect. Damper should remain closed

Tier/Group 2/1

IOCFR55.41
41
IOCFRS5.43

B/N/M Bank

K/A #: 072A301 Ability to monitor automatic operation of RMS including changes in ventilation alignment

K/A Values: 2.9

Cog Level: Memory

References: AOP-0O5, Attachment 1
LP RMS Objective 9